PALEOMAGNETIC STUDY OF THE
MAHOGANY OIL SHALE,
UINTA BASIN, UTAH

A Senior Thesis

Presented in Partial Fulfillment of the Requirements for
the Degree Bachelor of Science

by

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ABSTRACT

Geomagnetic polarity stratigraphy of the complete 135 foot thick Mahogany unit of the Parachute Creek Member in the Green River Formation has been determined from a bore-hole core drilled by Chevron West in Duchesne Co., Utah. 622 subcores were taken at equal intervals and measured with a 3-axis SCT magnetometer. 70 cores were AF demagnetized at 100 oe intervals to 600 oe in initial tests. The remaining 522 cores were treated at 300, 400, and 500 oe. Only polarity changes consistent through demagnetization and not unique to one core segment were used. The Mahogany unit is mainly normal with 9 thin reversed zones. The thickest reversal lies at 7626 feet. Compared with the polarity history of the Middle Eocene, the unit correlates with the normal polarity interval of Late Bridgerian age (46.5-45.0 m.y. B.P.). $^{40}Ar/^{39}Ar$ ages from the wavy tuff above and the curly tuff below imply an average age of 46.5 m.y. B.P., ±0.6 m.y. (O'Niell, 1980) placing it within marine magnetic anomaly no. 20 (La Brecque et at., 1977). Deposition rate is equal to, or less than, 8.2 mm/century for the compacted sediment. This is approximately a factor of 2 of the values quoted by Bradley in 1929 for the compacted oil shale beds of the Green River Formation. 67% compaction effect indicates an initial thickness of 400 feet, with a corrected deposition rate of 24.6 mm/century for the lamina pairs. The results confirm the earlier assumption that the laminae of the Mahogany unit in particular, and Green River Formation in general, are annual varves.

ACKNOWLEDGEMENTS

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INTRODUCTION

This study has three objectives. The first is to compare the paleomagnetic reversal history recorded in a complete borehole core of the Mahogany Ledge oil shales with the marine geomagnetic time scale (Berggren, 1969; La Brecque et al., 1977). The second objective is to compare the paleolatitude derived from the core results with independent data to estimate compaction effects. The third objective is to estimate the rate of deposition of this generally non-fossiliferous lacustrine deposit of Middle Eocene age.

The Mahogany Ledge of the Green River Formation is a kerogen-rich dolostone or marlstone and is commonly referred to as an oil shale. Kerogen is a waxy organic material. It is defined as a bituminous mineraloid that yields oil when subjected to destructive distillation. Estimates of in-place oil reserves of kerogen (Cairns, 1979) in the tri state area of Wyoming, Colorado, and Utah are equivalent to 1.8 trillion barrels. 150 billion barrels that may be recoverable are in high-grade deposits of the Green River Formation (Fig. 1) and may yield more than 25 gallons of oil per ton of shale distilled.

Strangway and McMahon (1973) conducted paleomagnetic studies on annually banded Eocene Green River sediments from the Parachute Creek Member in Colorado. They found a remanent magnetization of about 1-5x10^{-8} emu/cm^3 after

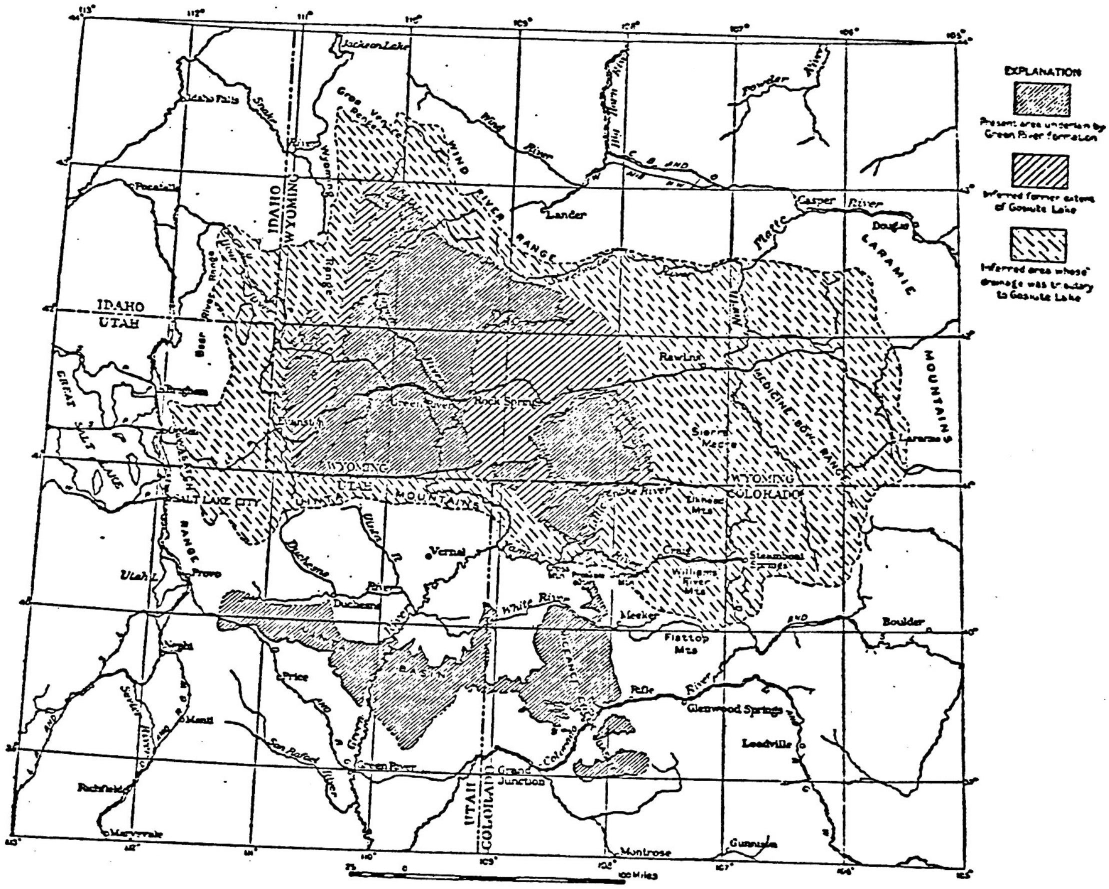


Figure 1.——Outline map of the Green River Basin and vicinity, Wyoming, Utah, And Colorado (after Bradley,1928).

demagnetization at 100 oersteds (oe) and this magnetization was probably carried by less than .002% detrital magnetite. Their work was the first paleomagnetic study of an oil shale using a spinner magnetometer. Karoly (1974) showed that cores taken from an oriented hand sample of Green River oil shale from the Piceance Creek Basin in Colorado had an average magnetic intensity of 4.39×10^{-5} emu/cm^3 and greatest directional stability at 400 oe demagnetization.

Fuggit (1976) found a magnetic reversal in an oil shale from a sequence of beds of the North Horn Formation at Wales Canyon, Utah and determined a virtual geomagnetic pole at 84° north latitude and 162.7° west longitude for the Early Tertiary. His study showed that oil shales can be successfully used for paleomagnetic studies in defining geomagnetic polarity horizons. Fenzan (1978) was able to measure weak magnetic intensities of the Mahogany Ledge unit using a superconducting magnetometer. His study delt with approximately the upper most 21 feet of the 135 foot bore-hole core supplied by Chevron West and Chevron Oil Field Research Company. He subsampled at 5 cm intervals along the core and found evidence for polarity reversal sequences in the Eocene.

This study concerns the remaining 114 feet of the bore-hole core. A superconducting magnetometer was used to measure magnetic intensities of the subcores.

GEOGRAPHIC SETTING

The borehole core was drilled by the Chevron West Division of Chevron Oil Company at the M. M. Norling No. 1-9B1 drill site SW, NE, Sec. 9, Township 2 south, Range 1 west of the 7.5 minute Roosevelt Quadrangle map in Utah. This site can be located in an atlas or highway map of Duchesne County, Utah approximately 1.5 miles north of the town of Roosevelt (Fig. 2). This section of the state lies in the Uinta Basin, an area of extensive Eocene lake deposits, south of the Uinta Mountains and east of the Wasatch Range.

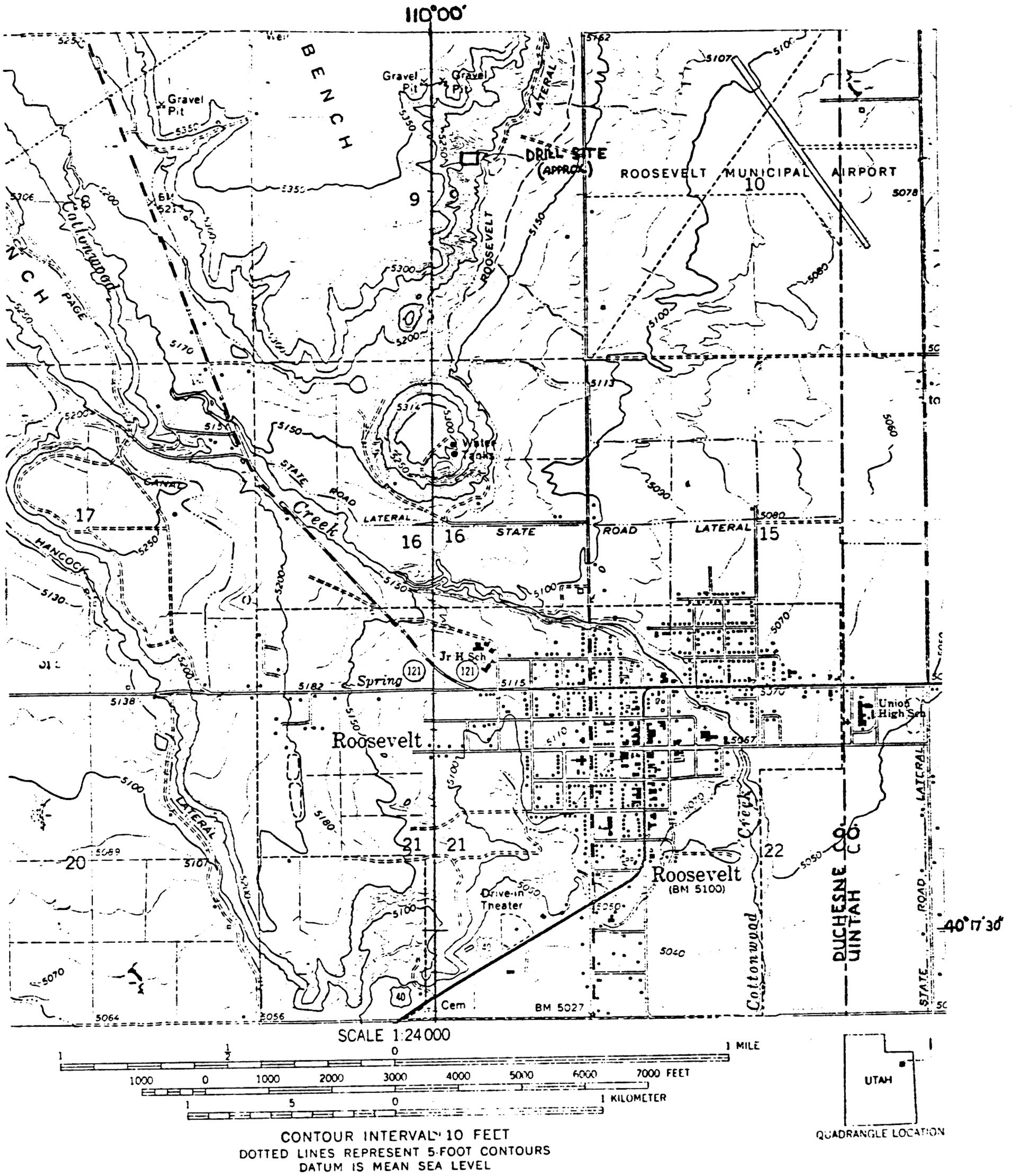


Figure 2.—Location of drill site, north of Roosevelt.

GEOLOGIC SETTING

The Uinta Basin in northeastern Utah is one of three large kerogen-rich lake deposits in the tri-state area of Wyoming, Colorado, and Utah. The other two are the Green River Basin of Wyoming and the Piceance Creek Basin in Colorado (Fig. 3). Bradley (1928) contends that a single body of water occupied the Uinta and Piceance Creek Basins during the Green River epoch of Middle Eocene time. This lake was designated Uinta Lake and it seems probable that it was divided into two or three smaller lakes at certain stages of low-water level.

The Mahogany bed is the thickest and richest oil shale bed in the Green River Formation. The maximum thickness of the bed is along the depositional axis of the Uinta Basin. The bed (Fig. 4) and its adjacent oil shale beds form an outcrop feature called the Mahogany Ledge while the subsurface correlative of the Mahogany Ledge is the Mahogany Zone (Cashion, 1964). The Mahogany Zone occurs in the Parachute Creek Member of the Green River Formation (Figs. 5A and 5B). About 14 feet above the richest oil shale bed in this zone is a 6 inch bed of analcitized tuff which is traceable across oil shale deposits of eastern Utah and Colorado. This tuff is frequently used as a stratigraphic reference bed and is called the Mahogany marker (Smith and Stanfield, 1964 p. 218-219).

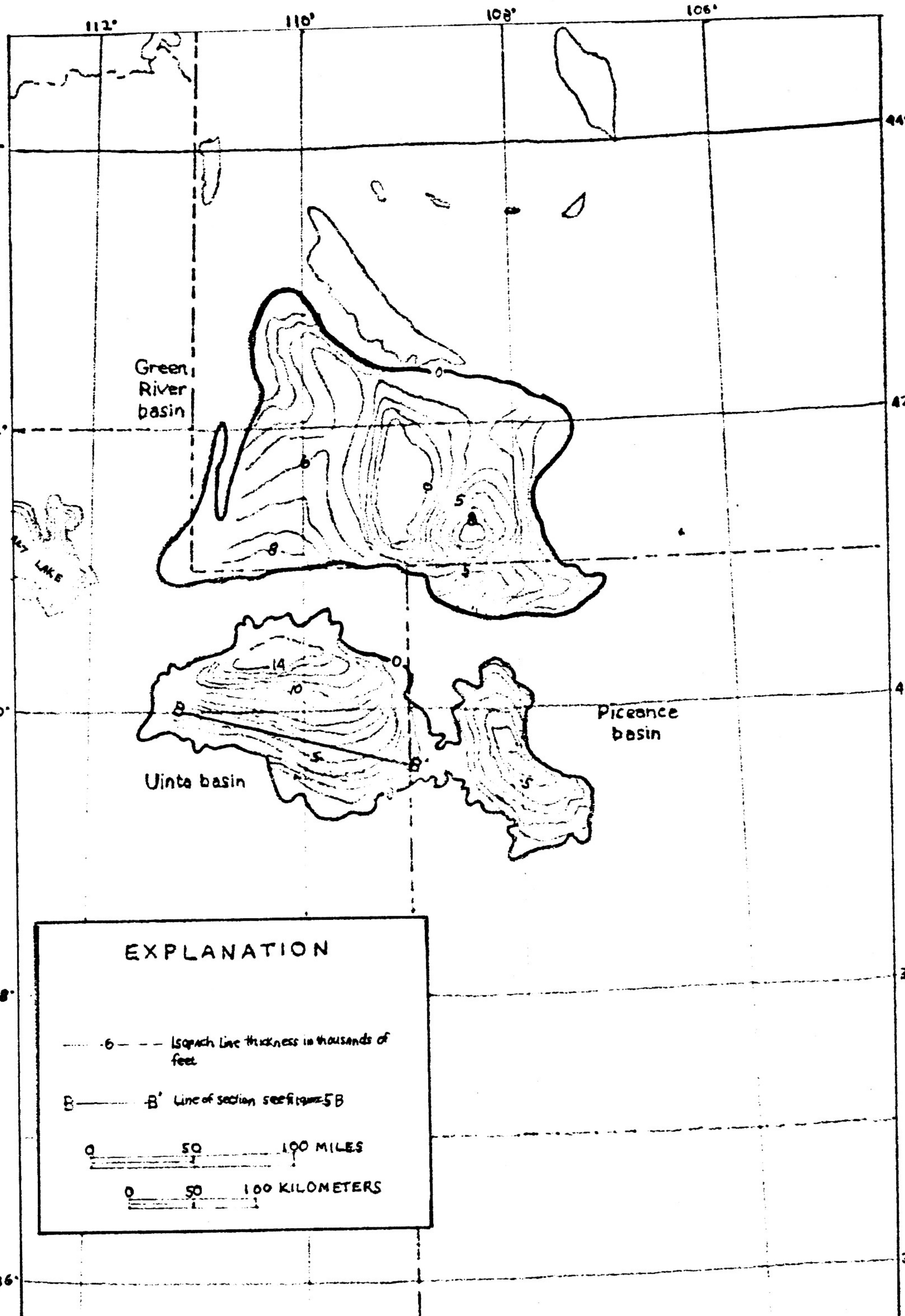


Figure 3.—Extent of the Green River, Uinta, and Piceance Basins (after McDonald, 1972).

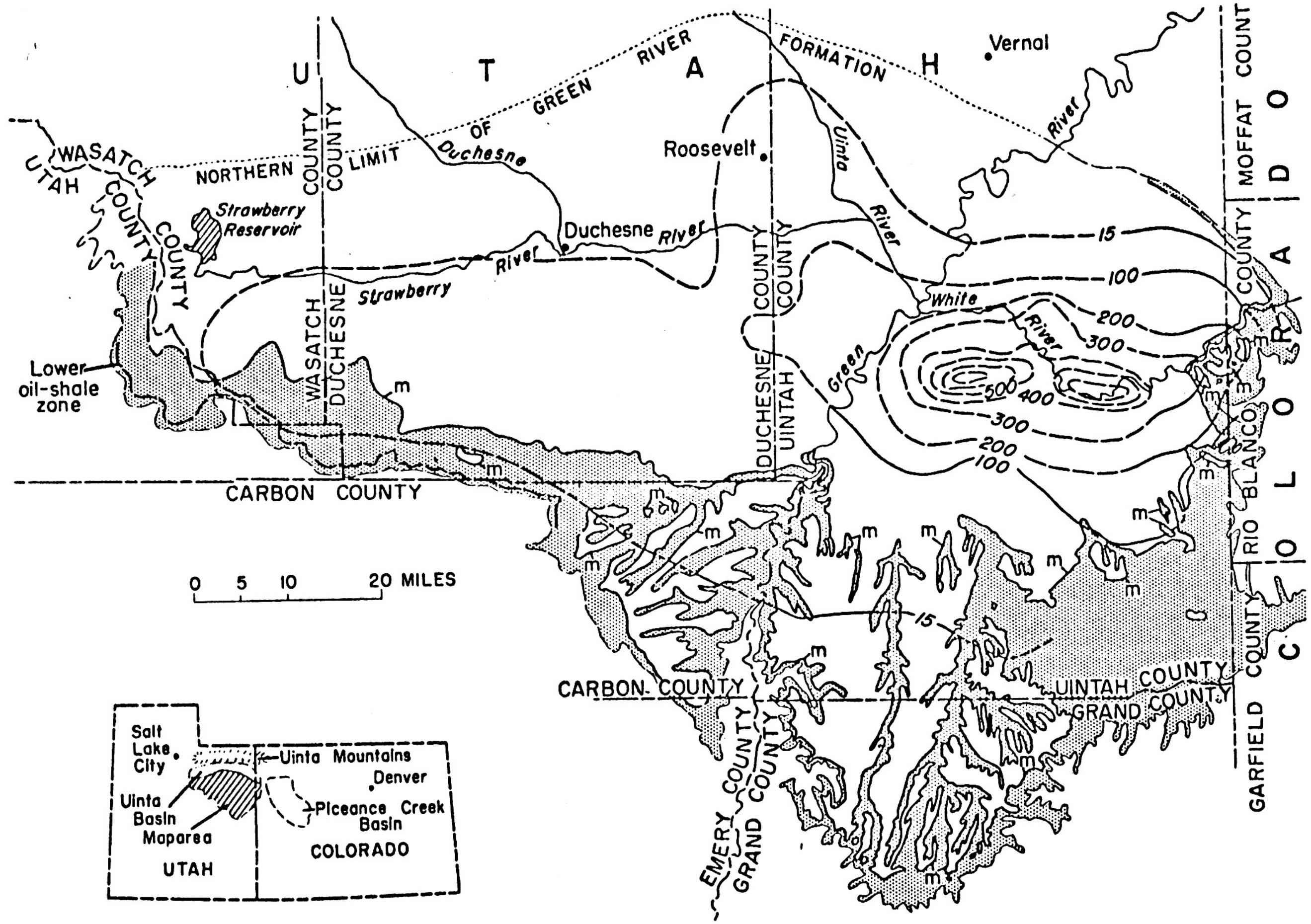


Figure 4.—Stipple shows outcrop of Green River Formation under the Mahogany bed (m.) (after Cashion, 1964).

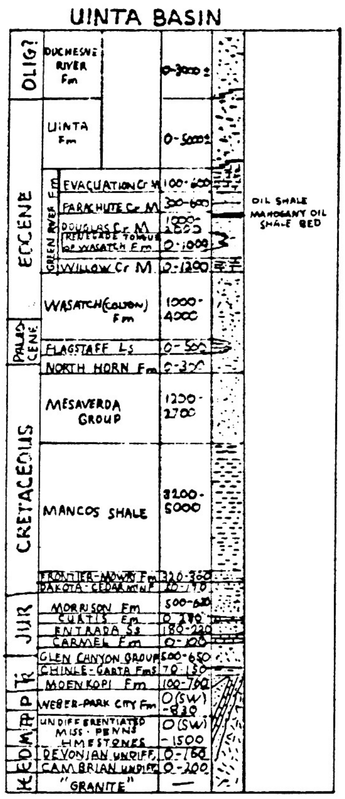


Figure 5a.——(after Hintze, 1973).

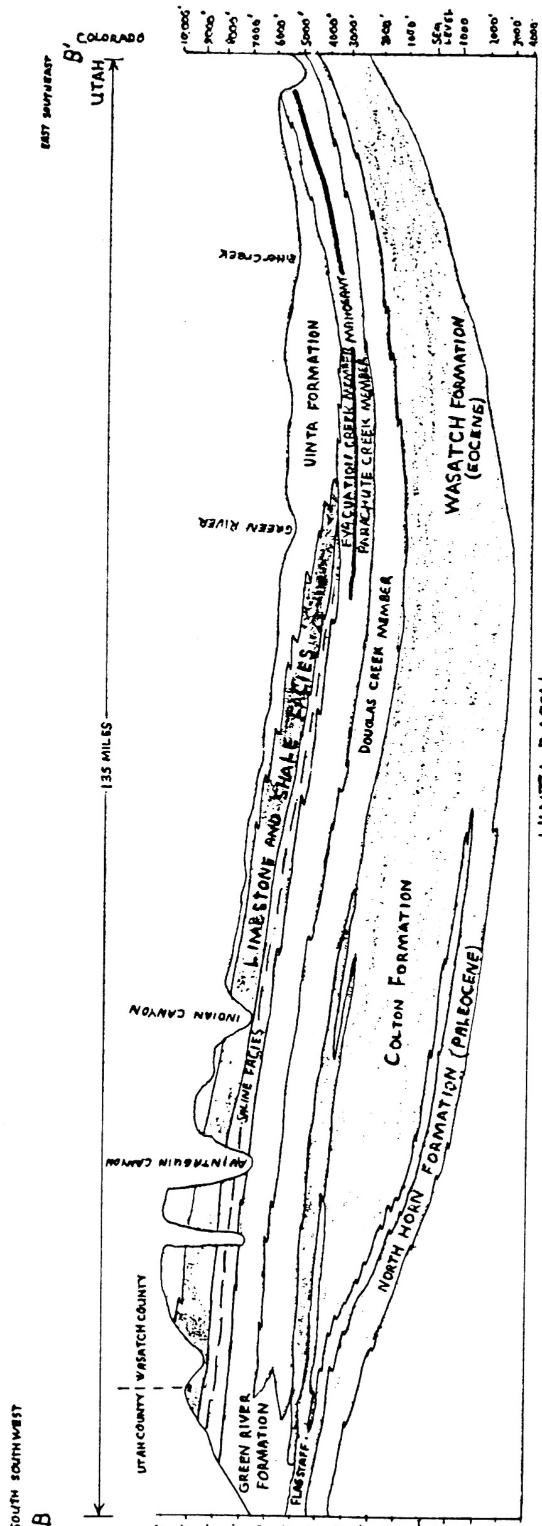


Figure 5b.——Cross-section of the Uinta Basin (after McDonald, 1972).

LABORATORY PROCEDURE

The borehole core was contained in 48 boxes of approximately 3 feet in length. Each box contained segments cut lengthwise by Chevron. Ohio State University received half of each segment. The core was marked down the center of each segment with a barbed line indicating the uphole direction. Some boxes were missing segments and hence had small gaps. These gaps were indicated on the side of the box with a green line the length of the gap.

In order to be consistant with Fenzan (1978), who studied the first 8 boxes, the same labeling scheme was used. Each box was numbered in sequence down the borehole. The depth of drilling was marked in 1 foot intervals on the core and box by Chevron. Each segment in a box was assigned a letter to establish its position relative to other segments. Subcores of each segment were drilled to measure the paleomagnetism of the core. The segments in each box were aligned to the corresponding depth markings and subcore centers were labeled at 5 cm intervals. Some segments were too small to yield subcores so none were taken. The subcores were assigned a letter corresponding to the number of subcores prepared from each segment (Fig. 6).

The subcores were extracted by drilling normal to the borehole core axis with an one-inch internal diameter diamond-tipped drill bit on a water-cooled drill press. Each

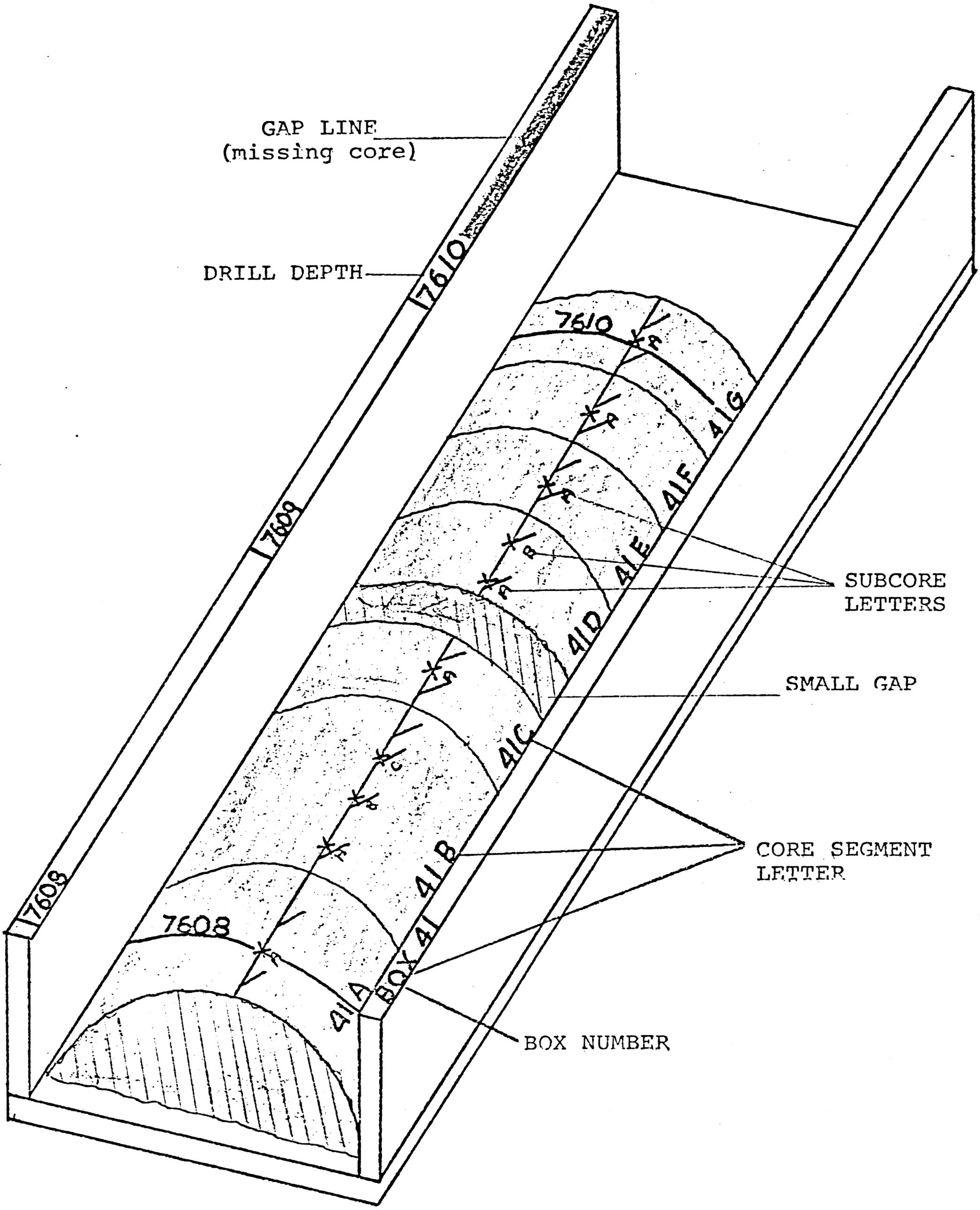


Figure 6.—Illustration of core box.

subcore was marked with an arrow indicating the uphole direction and labeled with the box number, segment, and segment position from which it was drilled. The fourth subcore taken from the fifth segment of box 28 would be labeled "28ED". The second subcore taken from the second segment of box 41 would be labeled "41BB" (Fig. 7). Every subcore is preceded by the letters "MHLD" to designate "Mahogany Ledge" in the computer printout (Appendix B).

After labeling, each subcore was trimmed to a standard length by a twin-bladed rock saw producing a cylindrical specimen 2.5 cm in diameter and 2.3 cm long. A total of 533 subcores were prepared this way.

The total magnetic moment, J, of the subcores were measured using a SuperConducting Technology (SCT) 3-axis cryogenic magnetometer. The total magnetic moment is expressed in terms of three orthogonal magnetic vectors X, Y, and Z (Fig. 8). The core could have rotated many times while being drilled so the only known orientation is the vertical or X direction of magnetization.

The values for X, Y, and Z are displayed by a digital LED readout attached to the magnetometer. The values for X, Y, and Z must be recorded three times for a single measurement. The initial value is recorded before the subcore is inserted into the magnetometer. The second value is recorded while the subcore is within the magnetometer and the third recorded after the subcore is withdrawn. The

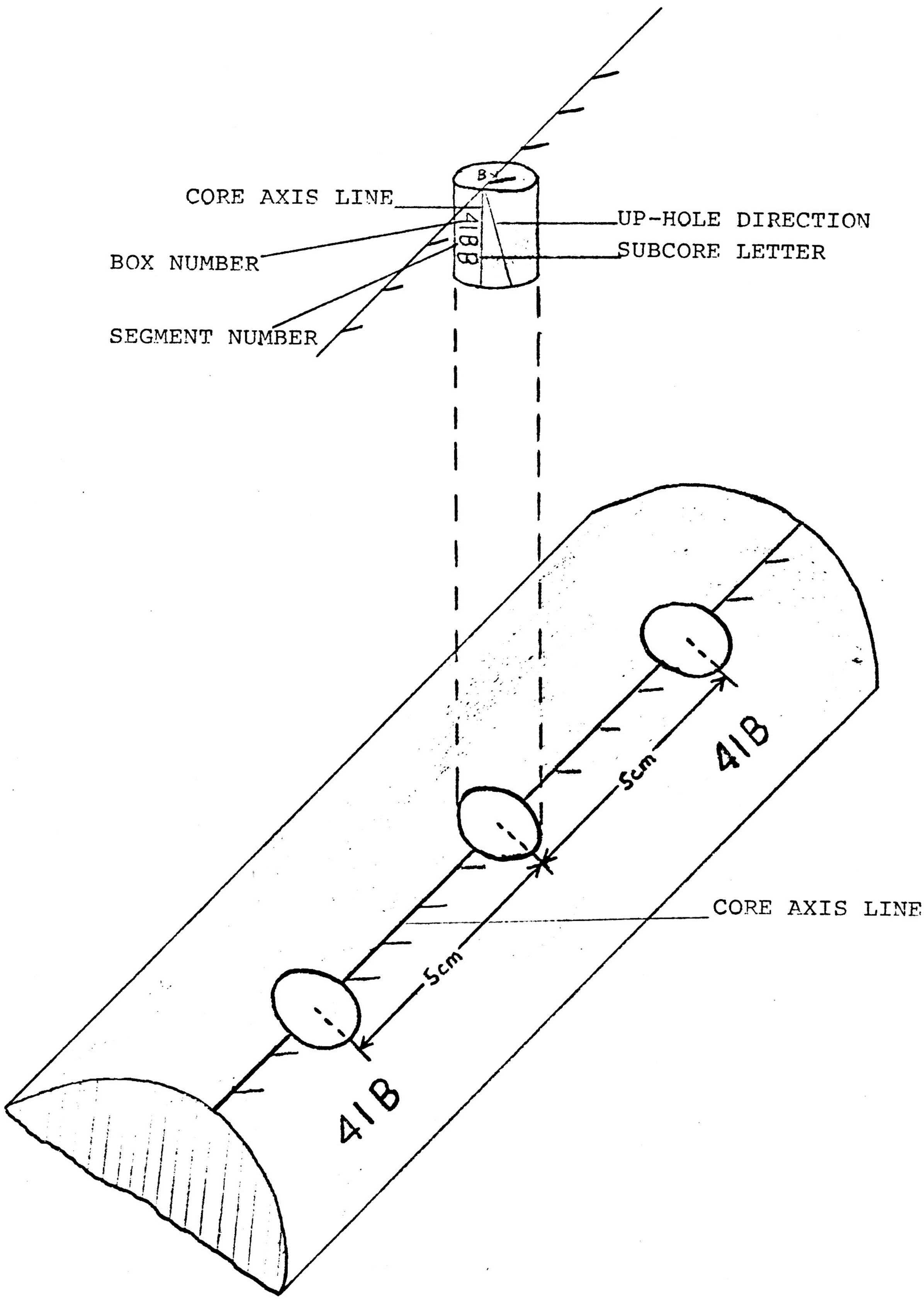


Figure 7.—Illustration of subcore labeling scheme.

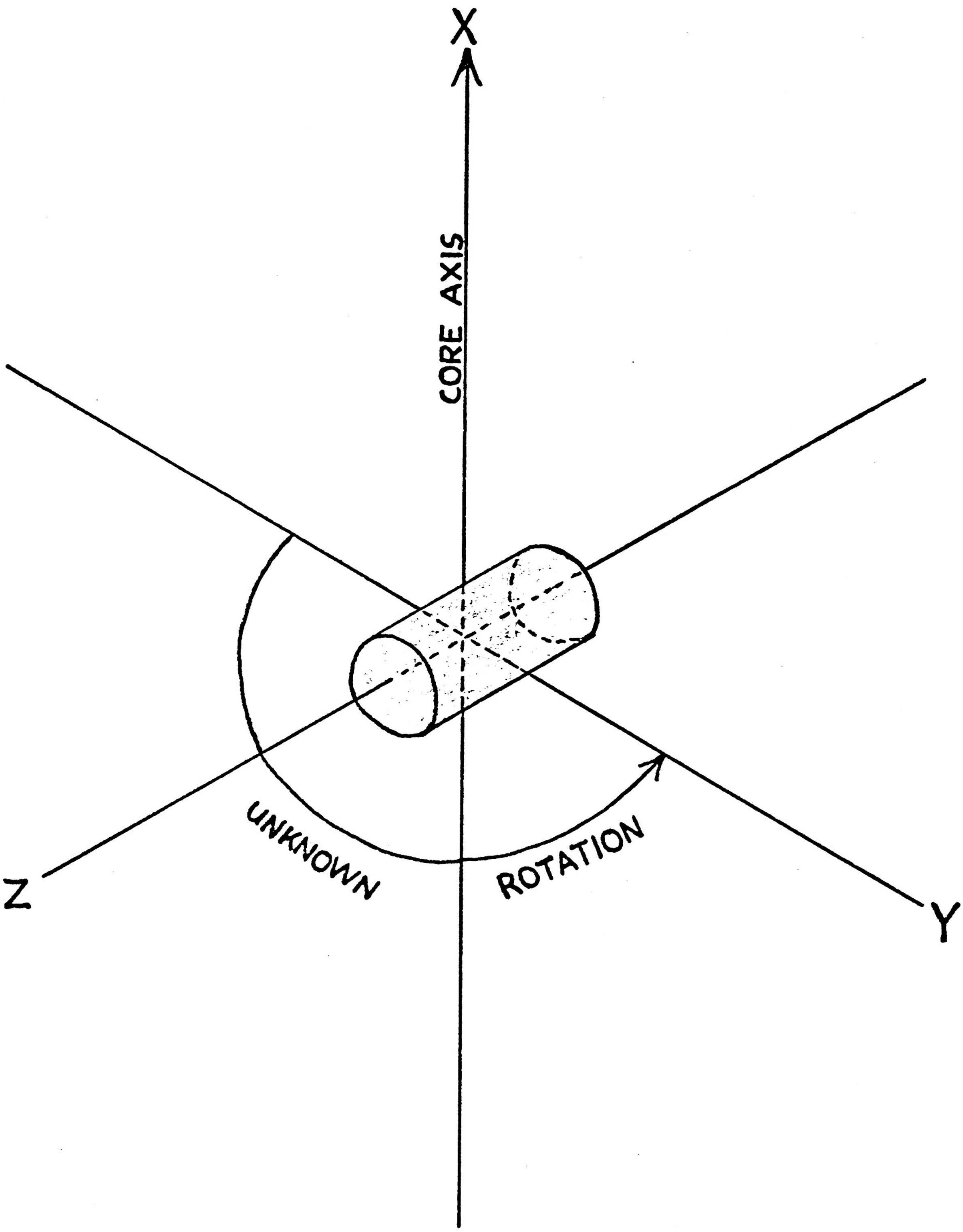


Figure 8.——X, Y, and Z vectors of subcore.

reason for recording the first and third values is to account for instrument drift. The values are typed on a standard IBM data card and combined with a computer program written by B. Elwood and modified by R. C. Bartman to calculate values of J in emu (gauss cm^3, Appendix A).

All the subcores were measured to determine their natural remanent magnetism (NRM). The NRM is the sum total of magnetic moments acquired by the sample. This includes the initial remanent magnetism in the sample when it formed and any additional magnetism acquired through geologic time.

Because of the large number of subcores, approximately 10 percent, 52 subcores, were demagnetized in intervals of 100 oe along the X, Y, and Z axes with a Schonstedt GSD 1 Geophysical Specimen Demagnetizer. The 52 subcores were selected at approximately every tenth subcore drilled throughout the core. This is a standard procedure that saves time and gives a general magnetic representation of the core. Table 1 shows the demagnetization of the 52 subcores from NRM through 600 oe. In the northern hemisphere an X vector component that has a negative (-) sign represents a normal polarity of the earth's magnetic field. The inclination of the field points downward. An X vector that has a positive (+) sign represents a reversed polarity of the earth's field and the inclination of the field points upward. All X vector components listed should be multiplied by 1×10^{-4} (SCT scaling constant) for conversion to cgs

CRYOGENIC MAGNETOMETER OUTPUT

SAMPLE	H=NRM		H=100		H=200		H=300		H=400		H=500		H=600	
	X	J	X	J	X	J	X	J	X	J	X	J	X	J
MHLD6D-A	-0.0158	0.198E-05	-0.0088	0.962E-06	-0.0043	0.572E-06	-0.0025	0.366E-06	-0.0015	0.320E-06	-0.0014	0.218E-05	0.0008	0.163E-06
MHLD9F-B	-0.0370	0.494E-05	-0.0206	0.257E-05	-0.0107	0.160E-05	-0.0043	0.549E-06	-0.0058	0.668E-06	-0.0045	0.468E-06	-0.0014	0.381E-06
MHLD10AA	-0.0269	0.282E-05	-0.0174	0.175E-05	-0.0107	0.109E-05	-0.0093	0.104E-05	-0.0077	0.828E-06	-0.0072	0.751E-06	-0.0029	0.415E-06
MHLD10DD	-0.0427	0.455E-05	-0.0247	0.254E-05	-0.0158	0.167E-05	-0.0114	0.120E-05	0.0039	0.172E-05	-0.0081	0.811E-06	-0.0060	0.634E-06
MHLD12AA	-0.0101	0.108E-05	-0.0044	0.483E-06	-0.0025	0.305E-06	-0.0017	0.209E-06	-0.0008	0.101E-06	-0.0005	0.877E-07	0.0	0.412E-07
MHLD12EB	0.0151	0.154E-05	0.0079	0.819E-06	0.0042	0.441E-06	0.0028	0.298E-06	0.0022	0.232E-06	0.0003	0.517E-07	0.0010	0.111E-06
MHLD13CD	-0.0262	0.267E-05	-0.0117	0.131E-05	-0.0035	0.428E-06	0.0021	0.315E-06	-0.0003	0.375E-06	0.0016	0.516E-06	0.0019	0.627E-06
MHLD14JB	-0.0156	0.182E-05	-0.0113	0.130E-05	-0.0064	0.675E-06	-0.0028	0.368E-06	-0.0026	0.273E-06	-0.0017	0.222E-06	-0.0008	0.126E-05
MHLD15BF	-0.0192	0.194E-05	-0.0123	0.125E-05	-0.0068	0.721E-06	-0.0036	0.398E-06	-0.0028	0.345E-06	-0.0029	0.360E-05	-0.0009	0.171E-06
MHLD15DA	0.0109	0.519E-05	0.0068	0.347E-05	0.0042	0.257E-05	0.0024	0.182E-05	0.0014	0.146E-05	0.0007	0.101E-05	0.0004	0.954E-06
MHLD16DC	-0.0215	0.223E-05	-0.0137	0.152E-05	-0.0085	0.976E-06	-0.0030	0.420E-06	-0.0031	0.371E-06	-0.0025	0.266E-06	-0.0004	0.241E-06
MHLD17DC	-0.0154	0.271E-05	-0.0125	0.206E-05	-0.0063	0.112E-05	-0.0033	0.601E-06	-0.0031	0.509E-06	-0.0016	0.274E-06	0.0001	0.213E-06
MHLD18CB	0.0181	0.188E-05	0.0095	0.955E-06	0.0047	0.477E-06	0.0022	0.217E-06	0.0011	0.115E-06	0.0005	0.680E-07	0.0015	0.165E-06
MHLD18HA	0.0172	0.239E-05	0.0091	0.119E-05	0.0050	0.718E-06	0.0023	0.310E-06	0.0015	0.267E-06	0.0004	0.119E-06	0.0012	0.252E-06
MHLD19DA	-0.0169	0.186E-05	-0.0109	0.136E-05	-0.0063	0.790E-06	-0.0039	0.442E-06	-0.0029	0.357E-06	-0.0016	0.174E-06	-0.0010	0.163E-06
MHLD20AC	-0.0113	0.138E-05	-0.0063	0.696E-06	-0.0029	0.328E-06	-0.0016	0.177E-06	-0.0012	0.160E-06	-0.0008	0.901E-07	-0.0002	0.292E-07
MHLD20EB	0.0110	0.111E-05	0.0059	0.645E-06	0.0026	0.320E-06	0.0014	0.257E-06	0.0005	0.602E-07	0.0007	0.763E-07	0.0010	0.110E-06
MHLD21EB	-0.0154	0.192E-05	-0.0070	0.761E-06	-0.0026	0.292E-06	-0.0016	0.343E-06	-0.0012	0.166E-06	-0.0012	0.126E-06	-0.0001	0.308E-07
MHLD22CB	-0.0184	0.261E-05	-0.0122	0.140E-05	-0.0072	0.832E-06	-0.0049	0.534E-06	-0.0034	0.397E-06	-0.0025	0.286E-06	-0.0001	0.648E-07
MHLD23DB	0.0205	0.253E-05	0.0133	0.136E-05	0.0055	0.647E-06	0.0027	0.334E-06	0.0021	0.254E-06	0.0012	0.150E-06	0.0013	0.169E-06
MHLD24ID	0.0839	0.103E-04	-0.0071	0.769E-06	-0.0034	0.371E-06	-0.0016	0.229E-06	-0.0013	0.148E-06	-0.0002	0.776E-07	-0.0004	0.600E-07
MHLD25EA	-0.0173	0.183E-05	-0.0112	0.113E-05	-0.0068	0.689E-06	-0.0032	0.345E-06	-0.0014	0.170E-06	-0.0014	0.163E-06	-0.0003	0.890E-07
MHLD26BC	-0.0166	0.171E-05	-0.0108	0.122E-05	-0.0058	0.701E-06	-0.0034	0.398E-06	-0.0019	0.246E-06	-0.0016	0.185E-06	-0.0011	0.135E-06
MHLD27BE	-0.0111	0.150E-05	-0.0078	0.132E-05	-0.0041	0.853E-06	-0.0020	0.527E-06	-0.0010	0.358E-06	-0.0003	0.185E-06	-0.0006	0.156E-06
MHLD28BA	-0.0288	0.314E-05	-0.0192	0.216E-05	-0.0172	0.192E-05	-0.0060	0.665E-06	-0.0034	0.396E-06	-0.0025	0.263E-06	-0.0018	0.224E-06
MHLD29AA	-0.0072	0.806E-06	-0.0059	0.632E-06	-0.0031	0.331E-06	-0.0011	0.144E-06	-0.0006	0.626E-07	0.0	0.112E-07	-0.0002	0.589E-07
MHLD29BE	-0.0141	0.160E-05	-0.0082	0.895E-06	-0.0914	0.483E-06	-0.0023	0.270E-06	-0.0017	0.205E-06	-0.0020	0.267E-06	-0.0005	0.750E-07
MHLD30DA	-0.0120	0.126E-05	-0.0078	0.797E-06	-0.0034	0.351E-06	-0.0025	0.273E-06	-0.0018	0.176E-06	-0.0013	0.144E-06	-0.0005	0.618E-07
MHLD31DD	-0.0410	0.415E-05	-0.0263	0.269E-05	-0.0133	0.137E-05	-0.0085	0.906E-06	-0.0054	0.575E-06	-0.0033	0.343E-06	-0.0033	0.368E-06
MHLD32CA	0.0112	0.118E-05	-0.0068	0.699E-06	-0.0223	0.240E-05	-0.0019	0.194E-06	-0.0012	0.141E-06	-0.0012	0.179E-06	-0.0012	0.132E-06
MHLD33AF	-0.0147	0.151E-05	-0.0085	0.867E-06	-0.0051	0.554E-06	-0.0028	0.291E-06	-0.0012	0.134E-06	-0.0004	0.550E-07	-0.0003	0.673E-07
MHLD33CB	0.0141	0.143E-05	0.0087	0.920E-06	0.0054	0.567E-06	0.0029	0.374E-06	0.0022	0.263E-06	0.0006	0.820E-07	0.0012	0.127E-06
MHLD34DA	0.0129	0.158E-05	0.0081	0.863E-06	0.0041	0.473E-06	0.0026	0.279E-06	0.0021	0.225E-06	0.0011	0.106E-06	0.0015	0.157E-06
MHLD35CB	0.0470	0.630E-05	0.0295	0.338E-05	0.0176	0.207E-05	0.0113	0.138E-05	0.0072	0.868E-06	0.0035	0.479E-06	0.0036	0.480E-06
MHLD35FD	-0.0732	0.759E-05	-0.0457	0.481E-05	-0.0252	0.274E-05	-0.0159	0.170E-05	-0.0083	0.101E-05	-0.0091	0.932E-06	-0.0128	0.129E-05
MHLD36EC	-0.0297	0.324E-05	-0.0191	0.207E-05	-0.0106	0.114E-05	-0.0061	0.743E-06	-0.0041	0.488E-06	-0.0033	0.382E-06	-0.0029	0.323E-06
MHLD37DB	-0.0626	0.843E-05	-0.0427	0.489E-05	-0.0250	0.296E-05	-0.0170	0.195E-05	-0.0123	0.140E-05	-0.0096	0.103E-05	-0.0109	0.119E-05
MHLD38EB	0.0210	0.213E-05	0.0115	0.123E-05	0.0052	0.558E-06	0.0023	0.244E-06	0.0011	0.276E-06	0.0	0.138E-06	-0.0010	0.275E-06
MHLD38KC	-0.0212	0.223E-05	-0.0139	0.131E-05	-0.0074	0.758E-06	-0.0044	0.443E-06	-0.0033	0.343E-06	-0.0025	0.246E-06	-0.0014	0.141E-06
MHLD39LC	0.0021	0.372E-06	0.0022	0.340E-06	0.0023	0.294E-06	0.0027	0.352E-06	0.0013	0.233E-06	0.0013	0.142E-06	0.0011	0.129E-06
MHLD40FA	0.0583	0.632E-05	0.0420	0.453E-05	0.0217	0.235E-05	0.0120	0.138E-05	0.0075	0.818E-06	0.0044	0.556E-06	-0.0078	0.866E-06
MHLD41DA	0.4712	0.575E-04	0.3324	0.357E-04	0.2266	0.244E-04	0.1474	0.157E-04	0.0977	0.101E-04	0.0677	0.716E-05	0.0510	0.535E-05
MHLD42AA	-2.9325	0.368E-03	-2.3430	0.279E-03	-0.3765	0.110E-03	-1.6510	0.197E-03	-1.5343	0.174E-03	-0.6205	0.987E-04	-0.4347	0.844E-04
MHLD42DA	-1.0950	0.136E-03	-0.8630	0.114E-03	-0.6692	0.804E-04	-0.5570	0.697E-04	-0.4665	0.508E-04	-0.4436	0.552E-04	-0.3986	0.483E-04
MHLD42HC	-0.1165	0.120E-04	-0.0780	0.850E-05	-0.0468	0.534E-05	-0.0260	0.299E-05	-0.0515	0.572E-05	-0.0135	0.154E-05	-0.0104	0.136E-05
MHLD43BC	-0.0448	0.480E-05	-0.0271	0.291E-05	-0.0166	0.180E-05	-0.0115	0.122E-05	-0.0062	0.678E-06	-0.0047	0.601E-06	-0.0041	0.499E-06
MHLD44CA	0.0086	0.112E-05	0.0052	0.593E-06	0.0029	0.336E-06	0.0016	0.186E-06	-0.0011	0.118E-06	-0.0015	0.168E-06	0.0005	0.866E-07
MHLD45FA	-0.0141	0.148E-05	-0.0113	0.122E-05	-0.0067	0.723E-06	-0.0043	0.451E-06	-0.0023	0.355E-06	-0.0024	0.262E-06	-0.0018	0.195E-06
MHLD45GE	-0.0136	0.218E-05	-0.0111	0.134E-05	-0.0062	0.835E-06	-0.0041	0.474E-06	-0.0029	0.375E-06	-0.0022	0.297E-06	-0.0011	0.215E-06
MHLD46AE	-0.0036	0.566E-06	-0.0056	0.560E-06	-0.0033	0.359E-06	-0.0015	0.191E-06	0.0038	0.419E-06	-0.0091	0.702E-07	-0.0020	0.249E-06
MHLD47CB	-0.0479	0.534E-05	-0.0287	0.327E-05	-0.0177	0.268E-05	-0.0142	0.253E-05	-0.0037	0.109E-05	-0.0027	0.172E-05	-0.0024	0.128E-05
MHLD48JB	0.0144	0.157E-05	0.0093	0.947E-06	0.0043	0.522E-06	0.0030	0.311E-06	0.0014	0.178E-06	0.0011	0.129E-06	0.0008	0.815E-07

Table 1.—Demagnetization of the 52 subcores.

magnetic units (emu).

Demagnetization of the subcores in successive intervals determines the optimum Alternating Field (AF) which the residual magnetic intensities stabilize. Figure 9 shows the demagnetization graph of J/J_o, (intensity of demagnetization/original NRM intensity), plotted against peak oersteds. The optimum demagnetization stage occures in the range of peak oersteds corresponding to the first reduction of slope of the curve defined by the mean intensity of each demagnetization stage. Figure 9 shows the first reduction in slope occures in the 300-500 oe range. Therefore, optimum demagnetization of the remaining subcores may lie between 300 oe and 500 oe.

Another method of determining the optimum demagnetization stage is the Briden Stability Index (Briden, 1972). This method defines a stability index, S, by the comparison of two vectors, J_1 and J_2, in successive demagnetization stages with the equation $S_{1-2} = 1-\left|J_1-J_2\right| / \left|J_1\right|$. Table 2 is a computer output of the Briden Index for each demagnetization stage. The value closest to 1.0 would represent the optimum demag stage. The optimum demag stage from table 2 is between 300 oe and 500 oe. This agrees with the demagnetization graph of figure 9 so the remaining subcores were demagnetized at 300, 400, and 500 oersteds.

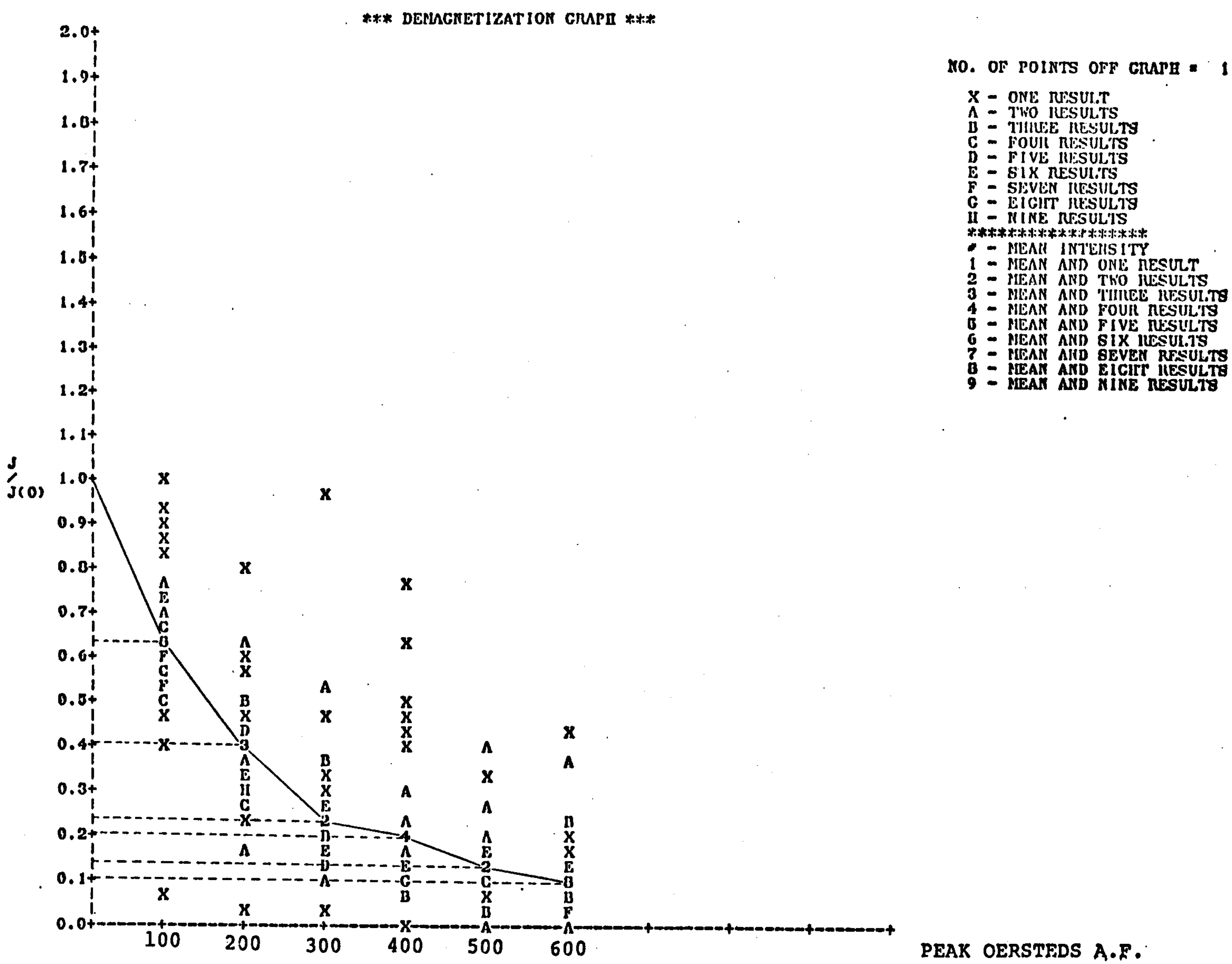


Figure 9.—Demag graph of 52 subcores. Horizontal dashed lines indicate fractional percentage of residual magnetism remaining and hence removed after each demag interval.

****
* BRIDEN STABILITY INDEX *
****

SAMPLE	NRM-100	100-200	200-300	300-400	400-500	500-600
MHLD8D-A	0.49	0.59	0.78	0.88	0.68	0.75
MHLD9F-B	0.52	0.62	0.34	0.78	0.70	0.81
MHLD10AA	0.62	0.62	0.96	0.79	0.91	0.55
MHLD10DD	0.56	0.66	0.72	0.56	0.47	0.78
MHLD12AA	0.45	0.63	0.69	0.48	0.87	0.47
MHLD12EB	0.53	0.54	0.68	0.78	0.22	-0.14
MHLD13CD	0.49	0.33	0.74	0.81	0.62	0.79
MHLD14JB	0.71	0.52	0.55	0.74	0.81	0.57
MHLD15BF	0.64	0.58	0.55	0.87	0.87	0.57
MHLD15DA	0.67	0.74	0.71	0.80	0.69	0.95
MHLD16DC	0.68	0.64	0.43	0.88	0.72	0.91
MHLD17DC	0.76	0.55	0.61	0.75	0.54	0.78
MHLD18CB	0.51	0.50	0.46	0.53	0.59	-0.42
MHLD18HA	0.50	0.60	0.43	0.86	0.45	-0.11
MHLD19DA	0.73	0.58	0.56	0.81	0.49	0.94
MHLD20AC	0.51	0.47	0.54	0.90	0.56	0.32
MHLD20EB	0.58	0.50	0.80	0.23	0.73	0.56
MHLD21EB	0.40	0.38	0.82	0.48	0.76	0.24
MHLD22CB	0.54	0.59	0.64	0.74	0.72	0.23
MHLD23DB	0.54	0.48	0.52	0.76	0.59	0.87
MHLD24IB	0.07	0.48	0.62	0.65	0.53	0.77
MHLD25EA	0.62	0.61	0.50	0.49	0.96	0.55
MHLD26BC	0.71	0.58	0.57	0.62	0.75	0.73
MHLD27BE	0.88	0.65	0.62	0.68	0.52	0.84
MHLD28BA	0.69	0.89	0.35	0.60	0.66	0.85
MHLD29AA	0.71	0.52	0.43	0.44	0.18	-3.27
MHLD29BE	0.56	0.54	0.56	0.76	0.70	0.28
MHLD30DA	0.63	0.44	0.78	0.64	0.82	0.43
MHLD31DD	0.65	0.51	0.66	0.63	0.60	0.93
MHLD32GA	0.59	-1.43	0.08	0.72	0.73	0.74
MHLD33AF	0.57	0.64	0.52	0.46	0.41	0.78
MHLD33CB	0.65	0.62	0.66	0.70	0.31	0.46
MHLD34DA	0.55	0.55	0.59	0.81	0.47	0.52
MHLD35CB	0.54	0.61	0.67	0.62	0.56	1.00
MHLD35FB	0.63	0.57	0.62	0.59	0.93	0.61
MHLD36EC	0.64	0.55	0.65	0.66	0.78	0.85
MHLD37DB	0.58	0.61	0.66	0.72	0.74	0.85
MHLD38EB	0.58	0.45	0.44	0.87	0.50	0.01
MHLD38KC	0.59	0.58	0.58	0.78	0.72	0.57
MHLD39LC	0.92	0.86	0.80	0.66	0.61	0.91
MHLD40FA	0.72	0.52	0.59	0.60	0.68	0.44
MHLD41DA	0.62	0.68	0.64	0.64	0.71	0.75
MHLD42AA	0.76	0.39	0.20	0.88	0.57	0.85
MHLD42DA	0.84	0.70	0.87	0.84	0.94	0.88
MHLD42HC	0.71	0.63	0.56	0.09	0.27	0.89
MHLD43BC	0.61	0.62	0.68	0.55	0.89	0.83
MHLD44CA	0.53	0.57	0.55	0.63	0.58	0.52
MHLD45FA	0.82	0.59	0.62	0.79	0.74	0.74
MHLD45GE	0.62	0.62	0.57	0.79	0.79	0.73
MHLD46AE	0.99	0.64	0.53	-0.19	0.17	-1.55
MHLD47CB	0.61	0.82	0.94	0.43	0.42	0.74
MHLD48JB	0.60	0.55	0.60	0.57	0.73	0.63
MEAN	0.62	0.54	0.60	0.66	0.63	0.51

Table 2.—Briden Stability Index using J values.

NORMAL AND REVERSED POLARITY ZONES

Zones of normal and reversed polarity are indicated in the cryogenic magnetometer output of Appendix B. Those zones marked with a (?) represent zones of possible reversed polarity such as sample "MHLD15DA". This zone of reversed polarity is confined to only one segment so it is possible that the segment may have been inverted while boxed and labeled at the drill site. An inverted segment would show as reversed polarity on the SCT. For this reason, only cores that changed from normal to reversed polarity at the 400 oe interval or less and/or remained reversed through two or more consecutive segments were distinguished as zones of reversed polarity, such as samples "MHLD10CB" and "MHLD 12EA-12FA" respectively.

Normal and reversed zones for the entire core are plotted in figure 10. The white areas represent reversed polarity zones while the black represent zones of normal polarity. Of the zones fitting the above criteria, only those having an average intensity of X greater than 5% of the mean 400 oe intensity of each corresponding demag graph were considered as true reversals. The zones whose average intensity of X is less than 5% of the mean 400 oe intensity are indicated by hatching. These hatched zones could represent "excursions" of the earth's magnetic field in a restricted region (of continental dimension) as the result

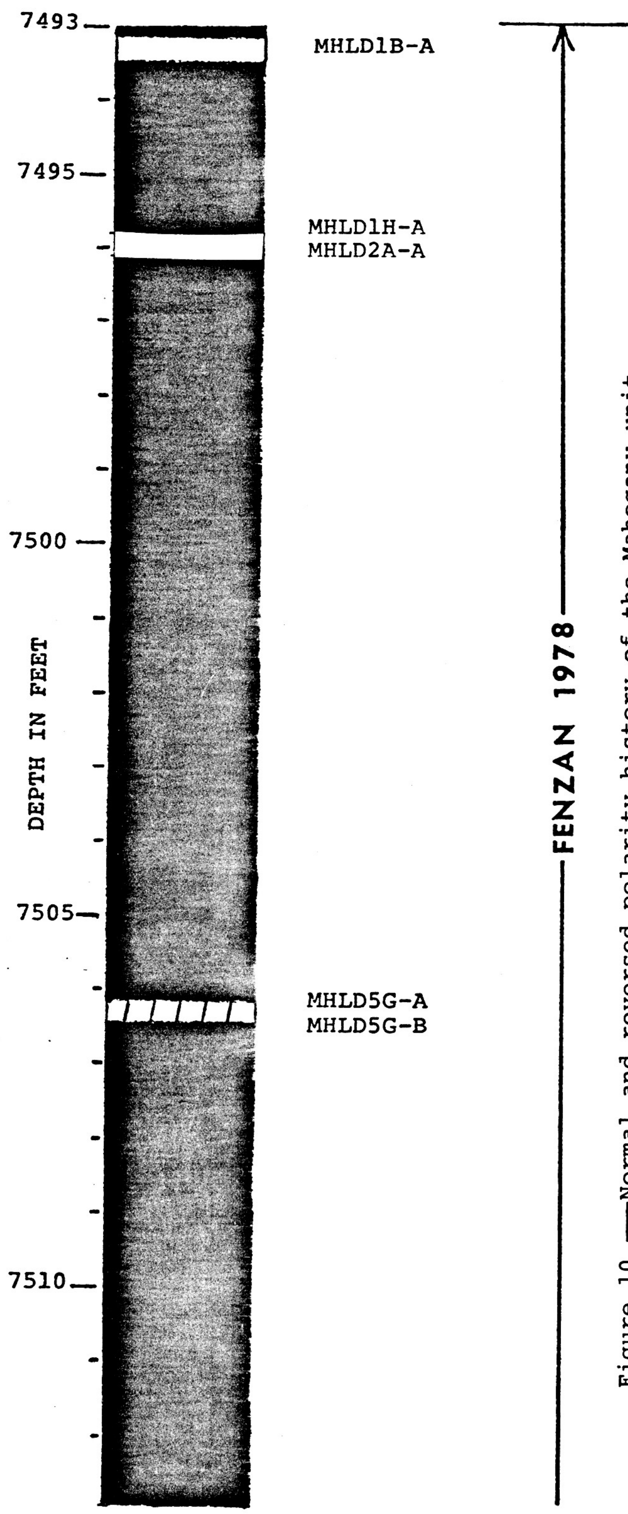
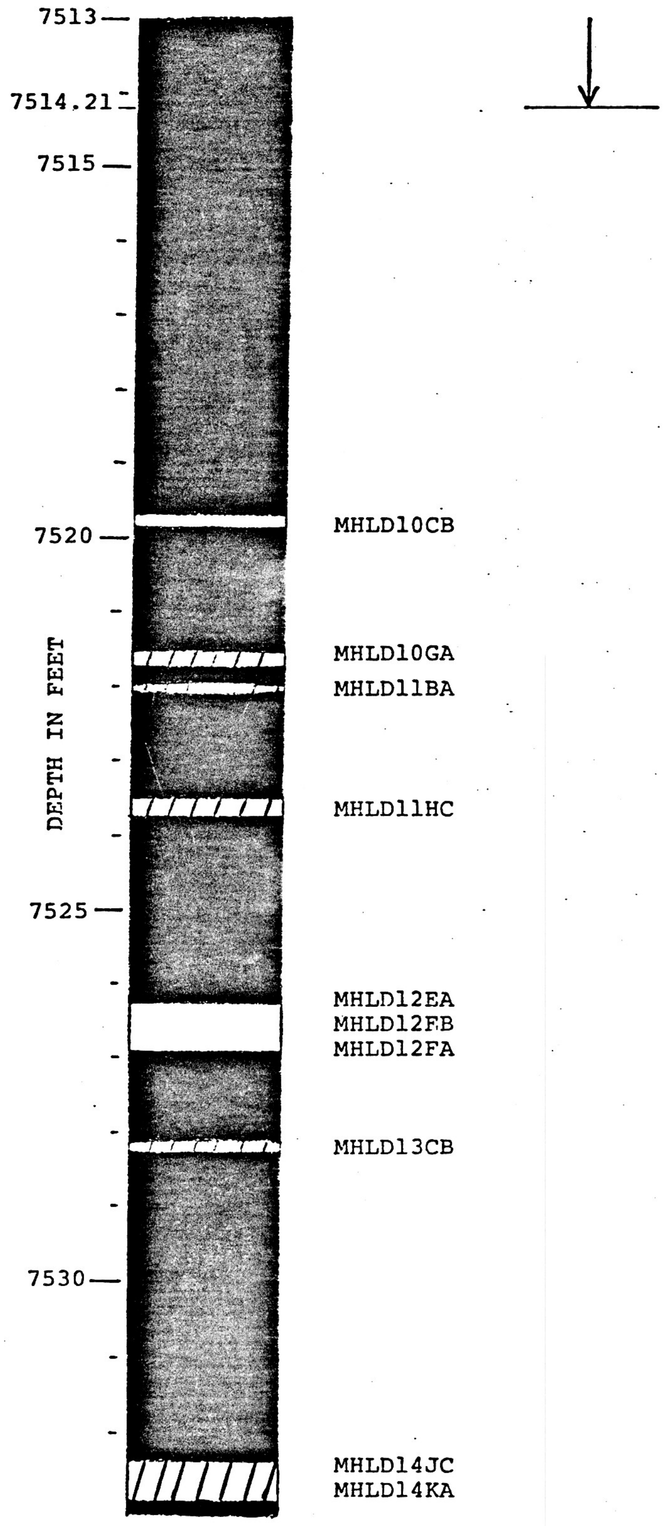
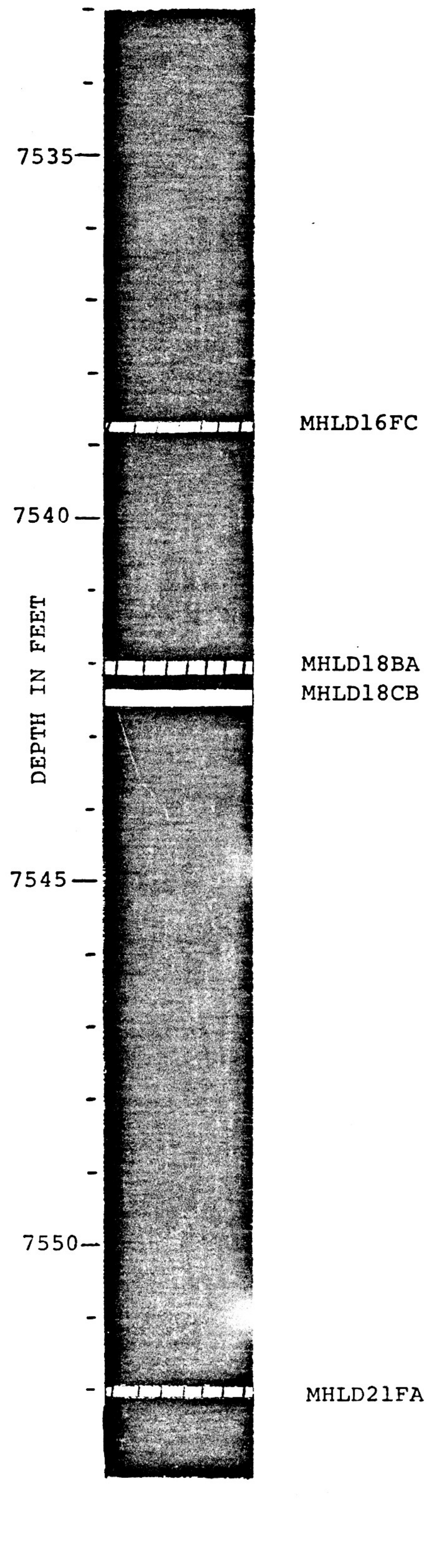
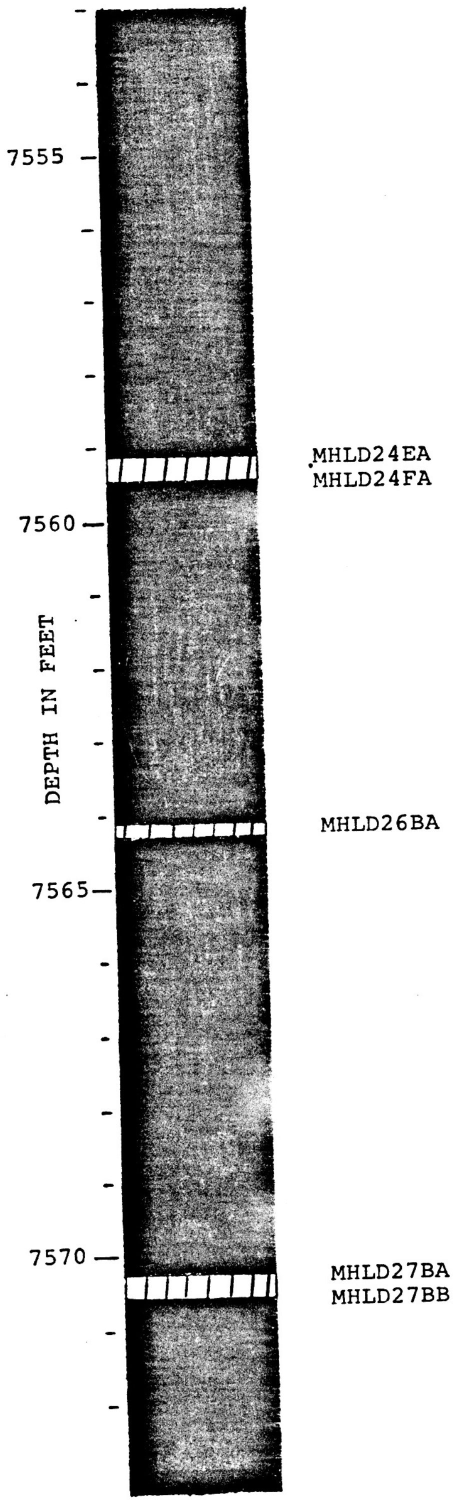


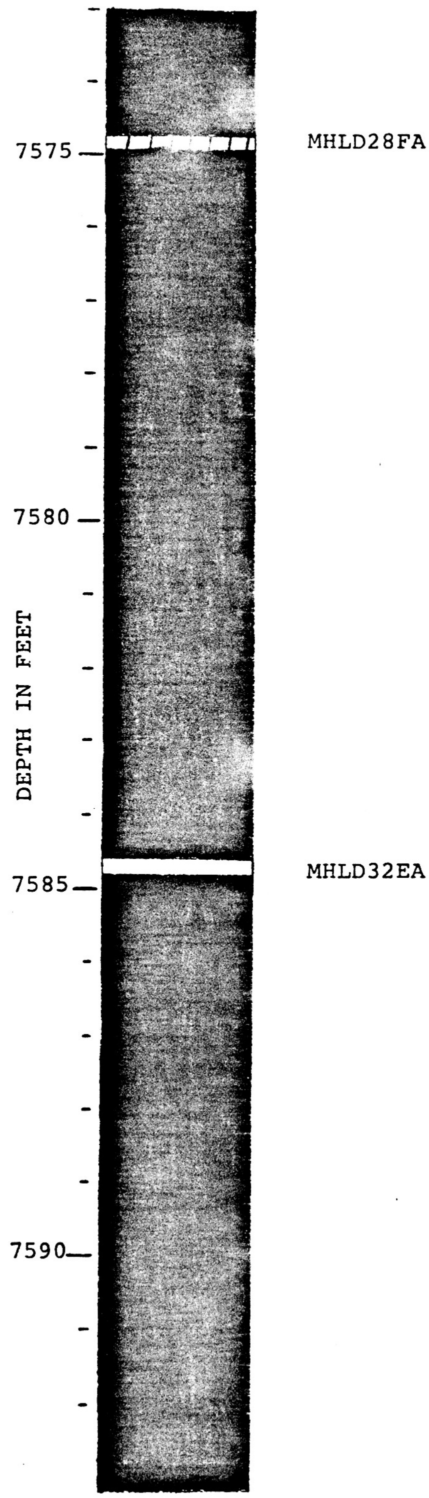
Figure 10.—Normal and reversed polarity history of the Mahogany unit. Black represents normal polarity, white represents reversed polarity, and hatched zones represent intervals of near zero inclination and may represent excursions of the earth's magnetic field.

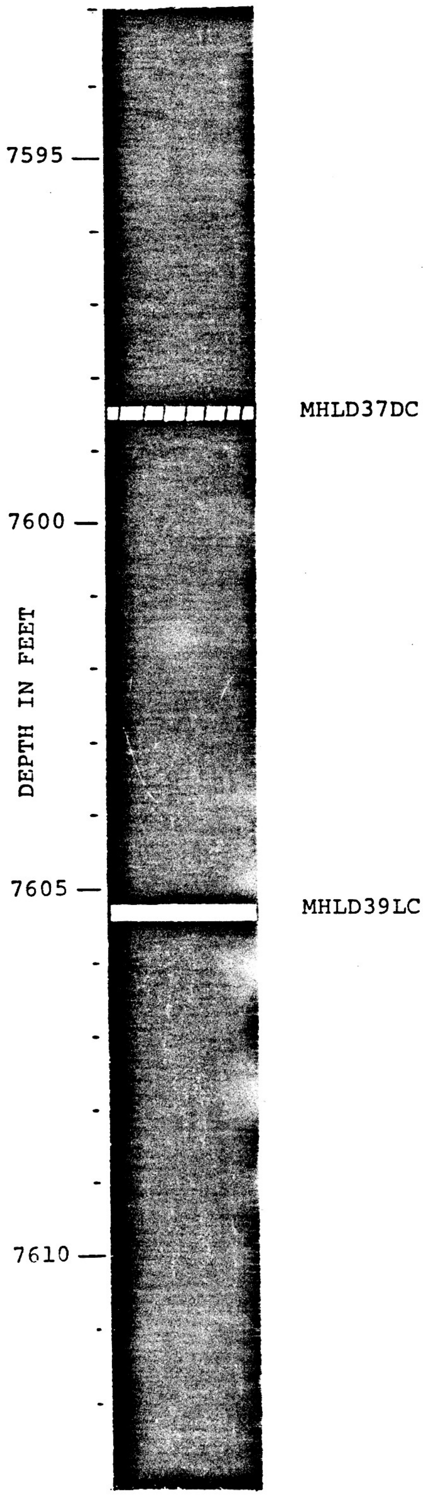

7513
7514.21
7515
7520
7525
7530
DEPTH IN FEET
MHLD10CB
MHLD10GA
MHLD11BA
MHLD11HC
MHLD12EA
MHLD12EB
MHLD12FA
MHLD13CB
MHLD14JC
MHLD14KA



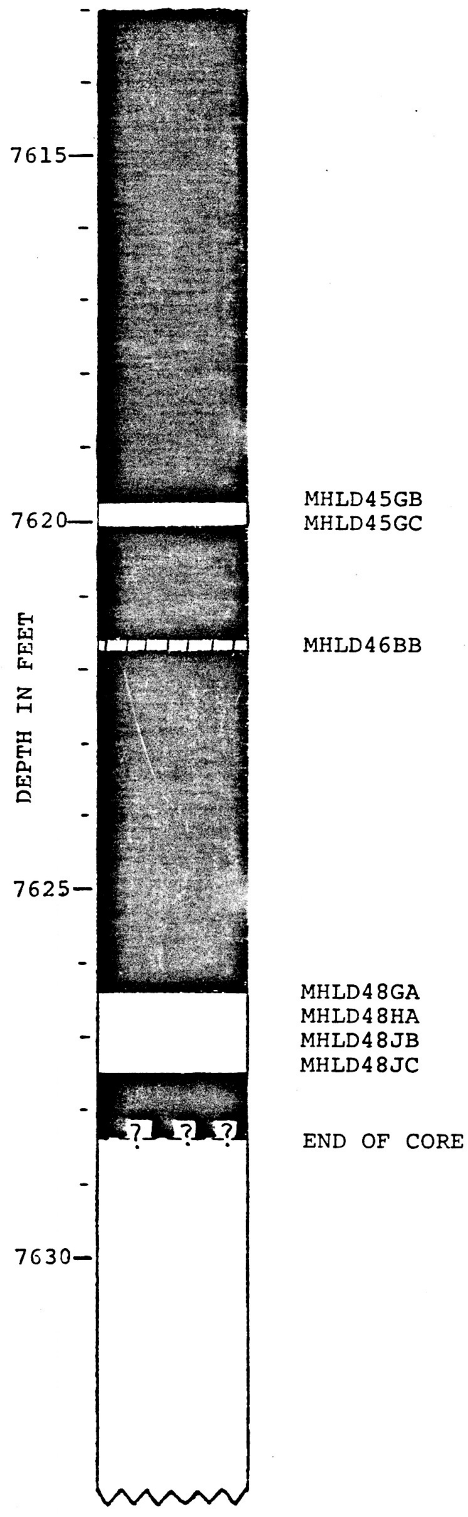
7535
7540
7545
7550
DEPTH IN FEET
MHLD16FC
MHLD18BA
MHLD18CB
MHLD21FA


7555
7560
7565
7570
DEPTH IN FEET
MHLD24EA
MHLD24FA
MHLD26BA
MHLD27BA
MHLD27BB


MHLD28FA
7575
7580
DEPTH IN FEET
MHLD32EA
7585
7590



7595
7600
7605
7610
DEPTH IN FEET
MHLD37DC
MHLD39LC

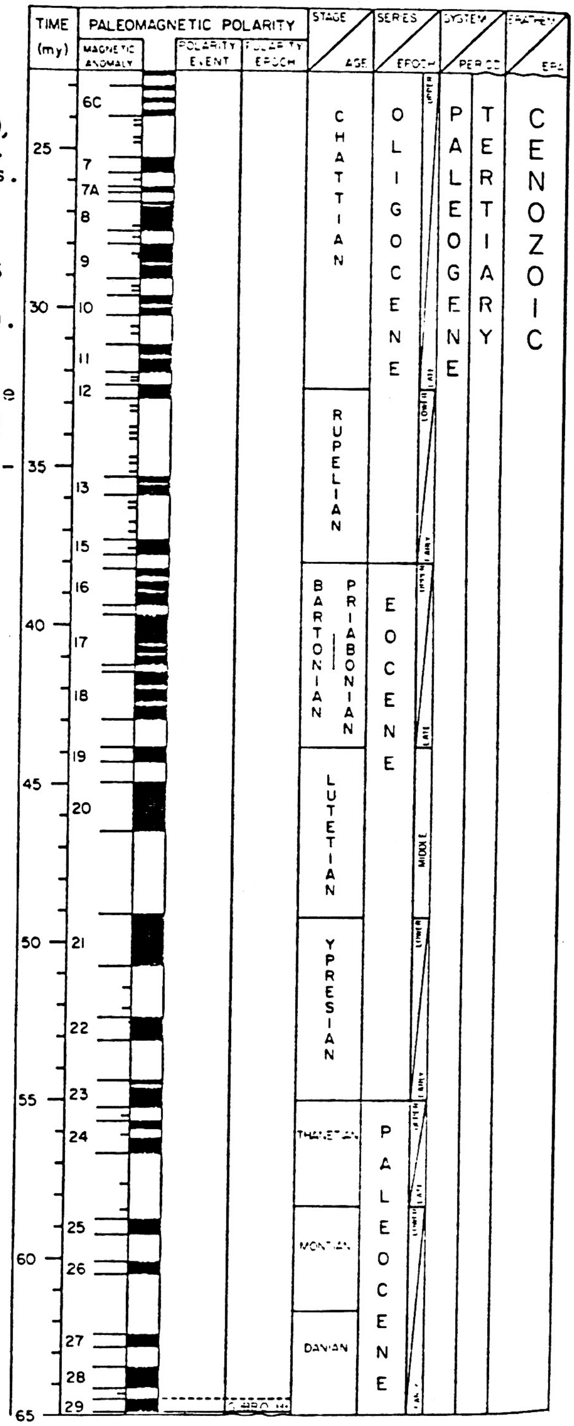

7615
7620
7625
7630
DEPTH IN FEET
MHLD45GB
MHLD45GC
MHLD46BB
MHLD48GA
MHLD48HA
MHLD48JB
MHLD48JC
END OF CORE

of non-dipole activity alone, during a period of subdued main dipole intensity, without any real reversal occurring (Watkins, 1972).

As indicated by figure 10, the Mahogany unit is mainly normal polarity with 9 thin reversed zones. The thickest reversal lies near the bottom of the core at 7626 feet. Compared to the polarity history (Table 3) of the Middle Eocene, the unit correlates with the normal interval of Late Bridgerian age (46.5-45.0 m.y. B.P.).

$^{40}Ar/^{39}Ar$ studies of the wavy tuff above the Mahogany unit and the curly tuff below were conducted by William A. O'Niell at Ohio State University (1980). His results (personal communication) indicate a weighted mean age of 46.5 m.y. B.P. with an error of ± 0.6 m.y. This agrees well with the normal marine magnetic anomaly 20 between 46.5 and 45.0 m.y. B.P. shown in table 3.

Table 3.——Approximate age interval of the Mahogany unit based on $^{40}Ar/^{39}Ar$ dates of the wavy tuff above (46.9 ±5.0 m.y. B.P.), curly tuff below (46.2 ±0.7 m.y. B.P.), and paleomagnetic results. Geomagnetic polarity time scale after La Brecque et al, (1977). $^{40}Ar/^{39}Ar$ dates (O'Niell, 1980) give a weighted mean age of 46.5 ±0.6 m.y. B.P. This age falls at the base of marine anomaly 20. The normal interval represented by the Mahogany unit can be no older than anomaly 20, so the age uncertainty must be taken in the negative sense. The duration of the deposition is most likely between 45.9 to 46.5 m.y. B.P. or Upper Bridgerian. The Mahogany unit probably represents about 0.5 m.y. because the section between the tuffs is somewhat thicker than the Mahogany unit. The Bridgerian age interval is from 49 to 45 m.y. B.P.



COMPARISON OF BRIDEN STABILITY INDEX USING $\vec{X}$ AND $|J|$

It should be noted that in order for the Briden Stability Index to be valid as defined, (1) the direction and magnitude of J must be known; (2) the residual moment must be measured in successive demagnetization stages for linear extrapolation of the residual vector between successive measurements; and (3) the alternating demagnetization field must be increased by equal intervals. In the case of a borehole core, only the direction and magnitude of the $\vec{X}$ vector components of each subcore are known and only the relative stability of the $\vec{X}$ vector can be determined with the Briden Index.

The subcores were sampled from a borehole core and the core could have rotated many times while being drilled. This results in completely randomized azimuth orientations of the core segments and hence comparison of the total magnetization $\vec{J}$ vector is meaningless. However, Noltimier, (personal communication), and Bergström, Faber, and Noltimier (1979) suggest that comparison of the scalar magnitudes $|J|$ of the total moment without reference to direction may also be a useful indicator of magnetic stability, since the removal of unstable vector components is invariably accompanied by changes in the magnitude of the sample moment. Appendix B lists the Briden Index results based on the scalar total magnetization $|J|$ and vertical vector component $\vec{X}$.

Table 4 is a direct comparison of the Briden Stability Index using total scalar magnetization $|J|$ and vertical component $\vec{X}$ plotted to depth. The values for $\vec{X}$ and $|J|$ were obtained from Appendix B and represent the demag stage indicating the most stable residual magnetism for the depth intervals shown. This shows that there is good agreement between the sets of results and indicates that single component or total moment analysis gives valid indication of Briden Stability Index behavior.

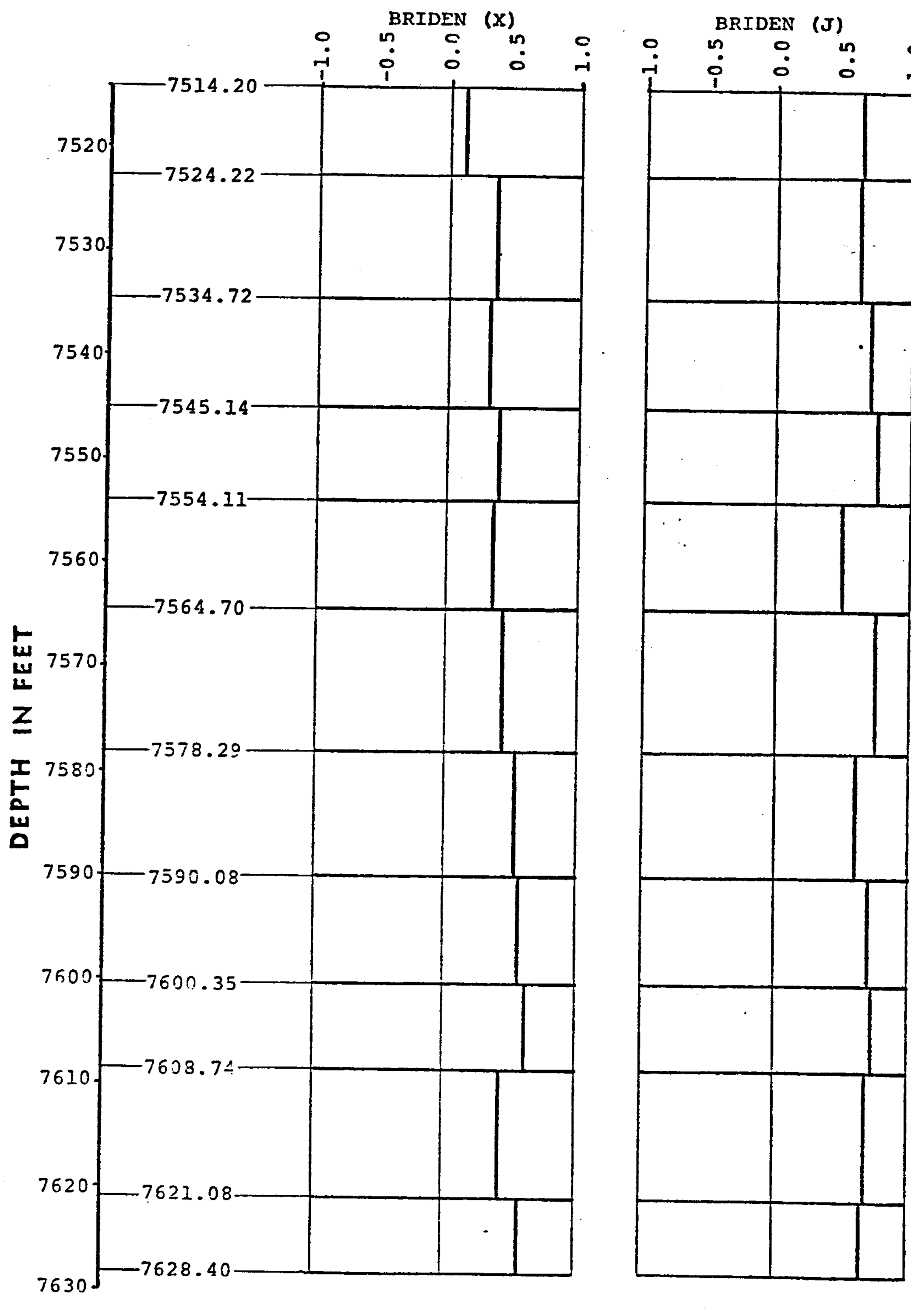


Table 4.—Comparison of the Briden Stability Index using vertical vector component $\vec{X}$ and scalar total magnetization $|\vec{J}|$ verses depth.

INCLINATION AND PALEOLATITUDE

The inclination of each subcore can be calculated, since the magnitude and geometric orientation of $\vec{X}$ and $|J|$ are known, by using the formula: $I = \sin^{-1}\left[(X)(1\cdot 10^{-4})/J\right]$ where I is the inclination in degrees. The paleolatitude can then be calculated using the dipole formula: $\tan L = 0.5 \tan I$ where L is the paleolatitude in degrees.

Appendix B lists the mean inclination for each depth interval. From this mean the paleolatitude is calculated, also listed in Appendix B. The average inclination of all the means for NRM is approximately 60°, and 31° after 400 oe demagnetization. The paleolatitude calculated for the NRM and 400 oe interval using these mean inclinations are 40.9° north and 16.7° north respectively.

Figures 11 A-E are north polar stereographic maps based on paleocontinental maps of Smith and Briden (1977). Each map shows the site location and estimated declination change through time. The declination was estimated as the acute angle between a line connecting the site and north geographic pole, and the principle meridian of the site location. Figures 12 A-B are graphs of latitude and longitude drift verses time of the site. These graphs were plotted from the estimated site locations of figures 11 A-E. Figure 12 C is the calculated declination change verses time at the site based on the maps of figures 11 A-E. From the graph the site was found to lie 42° north latitude, 87° west longitude, and have a declination of 16.5° east at 45 m.y. B.P. (the approximate age of the Mahogany unit).

By rearranging terms in the dipole formula the inclination can be calculated by $I = \tan^{-1}(2 \tan L)$ where I is the inclination and L the latitude. The modern inclination value of the site at 40.3° north is approximately 59.5°. The inclination of the site 45 m.y. B.P. when it was 42° north was approximately 61°. However, after 400 oe demagnetization the average inclination was 31° which gives a paleolatitude of 16.7° north. This produces quite a discrepancy for the paleolatitude.

Figure 13 is a stereonet of paleomagnetic results for rocks of Eocene age in western United States. Point A represents the theoretical pole position for the Mahogany unit based on the paleocontinental maps of figures 11 A-E. Points B, C, and D are pole positions for the Green River Formation (the Laney Member of the Green River, and the Wasatch Formation respectively). Point E is the pole position of the Siletz River Volcanic Series (Cox, 1957) and indicates a probable tectonic rotation to the east. Point F is the pole position, after 100 oe AF demagnetization, of the Parachute Creek Member of the Green River Formation (Strangway and McMahon, 1973). As indicated, this pole position is quite different compared to the results of Torreson et al., (1949) and the theoretical pole position

Present day North polar stereographic

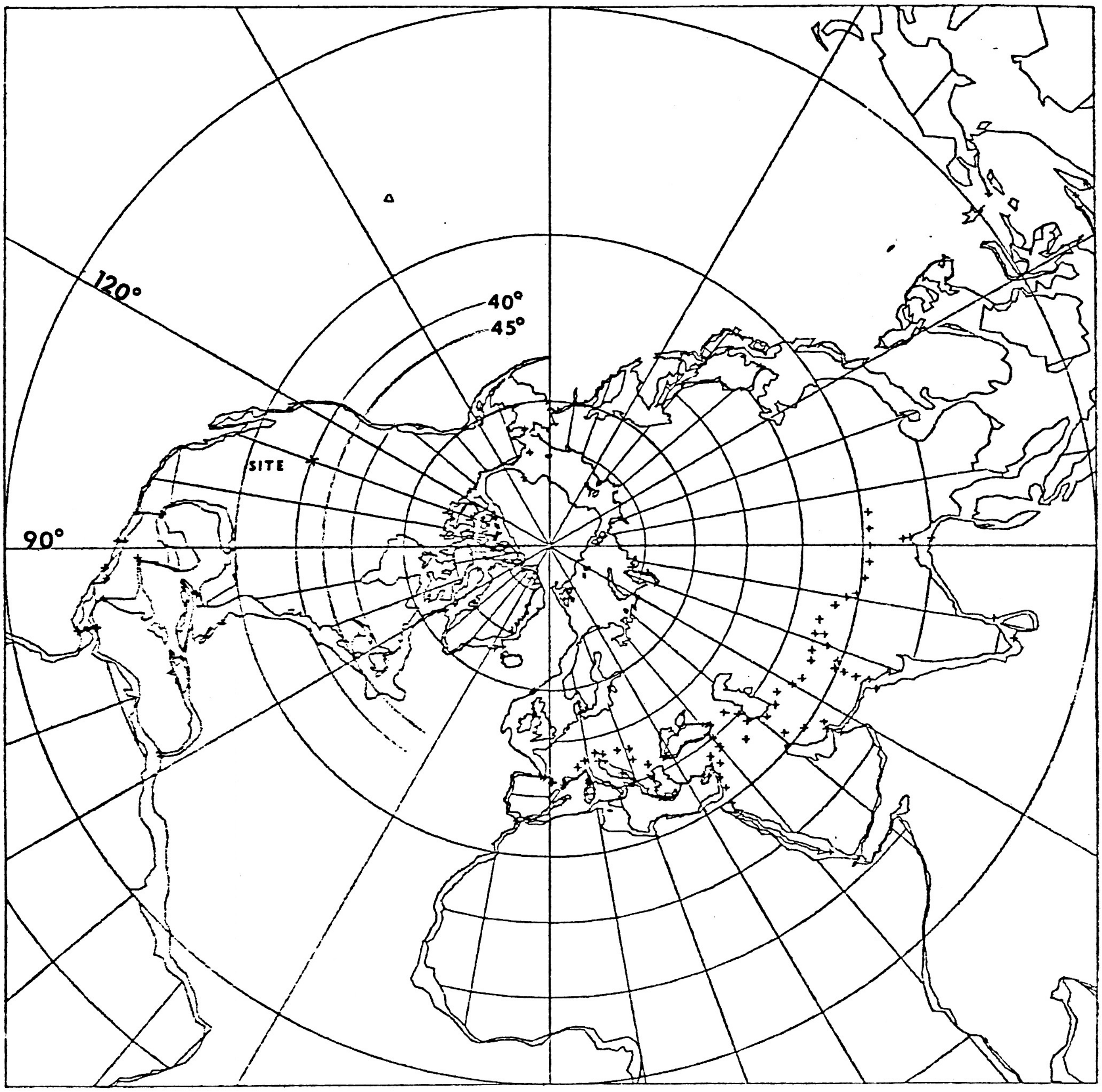


Figure 11A.---North polar stereographic map showing present day site location of 40° N. latitude and 110° W. longitude. Present day declination for core sample is not known.

10 million years
late Miocene (Cenozoic)

North polar stereographic
$N = 87$ Alpha-95 = 3·2

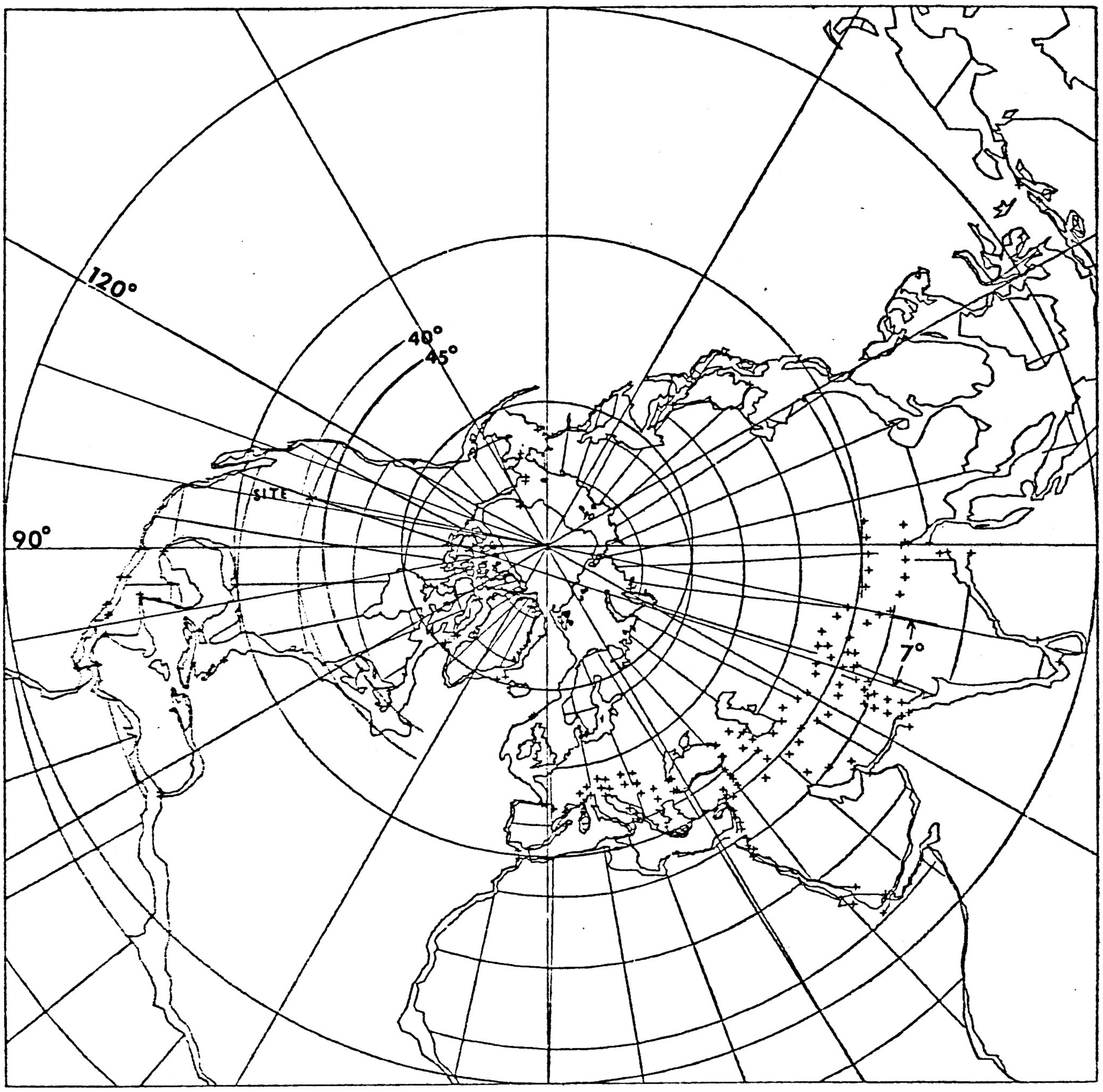


Figure 11B.---North polar stereographic map during late Miocene showing site location of approximately 42° N. latitude and 102° W. longitude with a 7° estimated declination.

20 million years
early Miocene (Cenozoic)

North polar stereographic
$N = 46$ Alpha-95 = 5·7

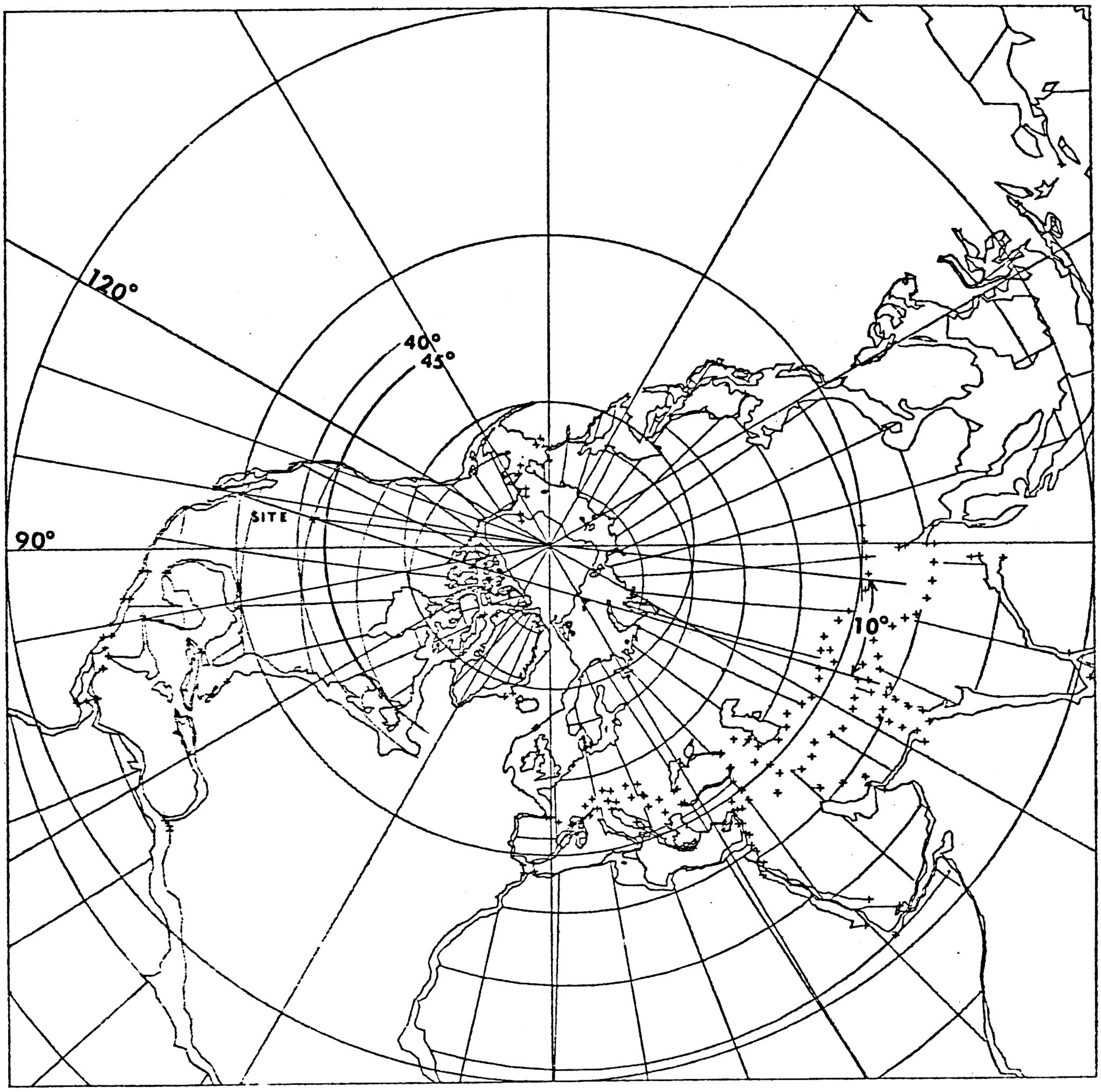


Figure 11C.---North polar stereographic map during early Miocene showing site location of approximately 43° N. latitude and 97° W. longitude with a 10° estimated declination.

40 million years
late Eocene (Cenozoic)

North polar stereographic
$N = 28$ Alpha-95 = 4·5

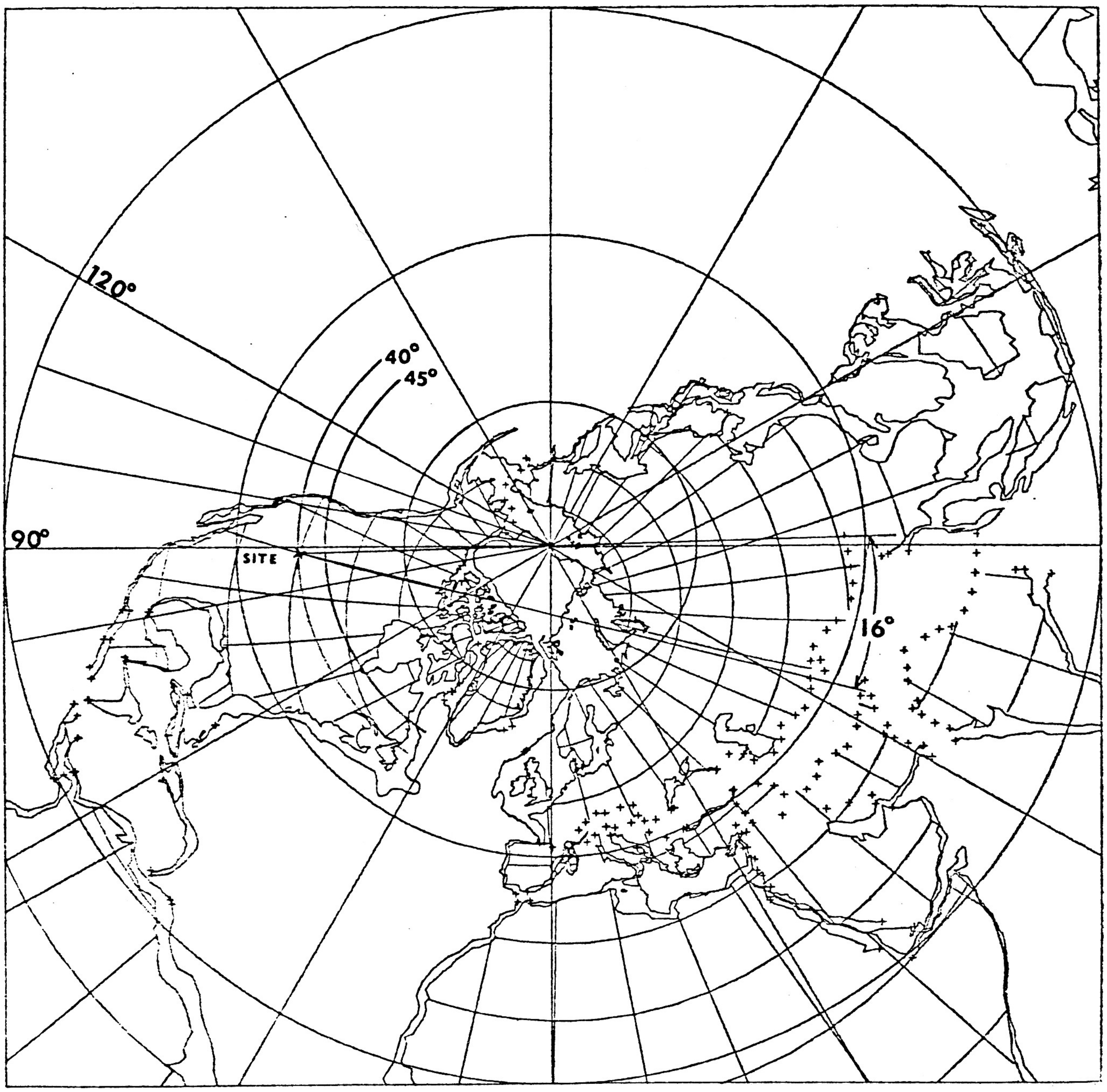


Figure 11D.---North polar stereographic map during late Eocene showing site location of approximately 40° N. latitude and 88° W. longitude with a 16° estimated declination.

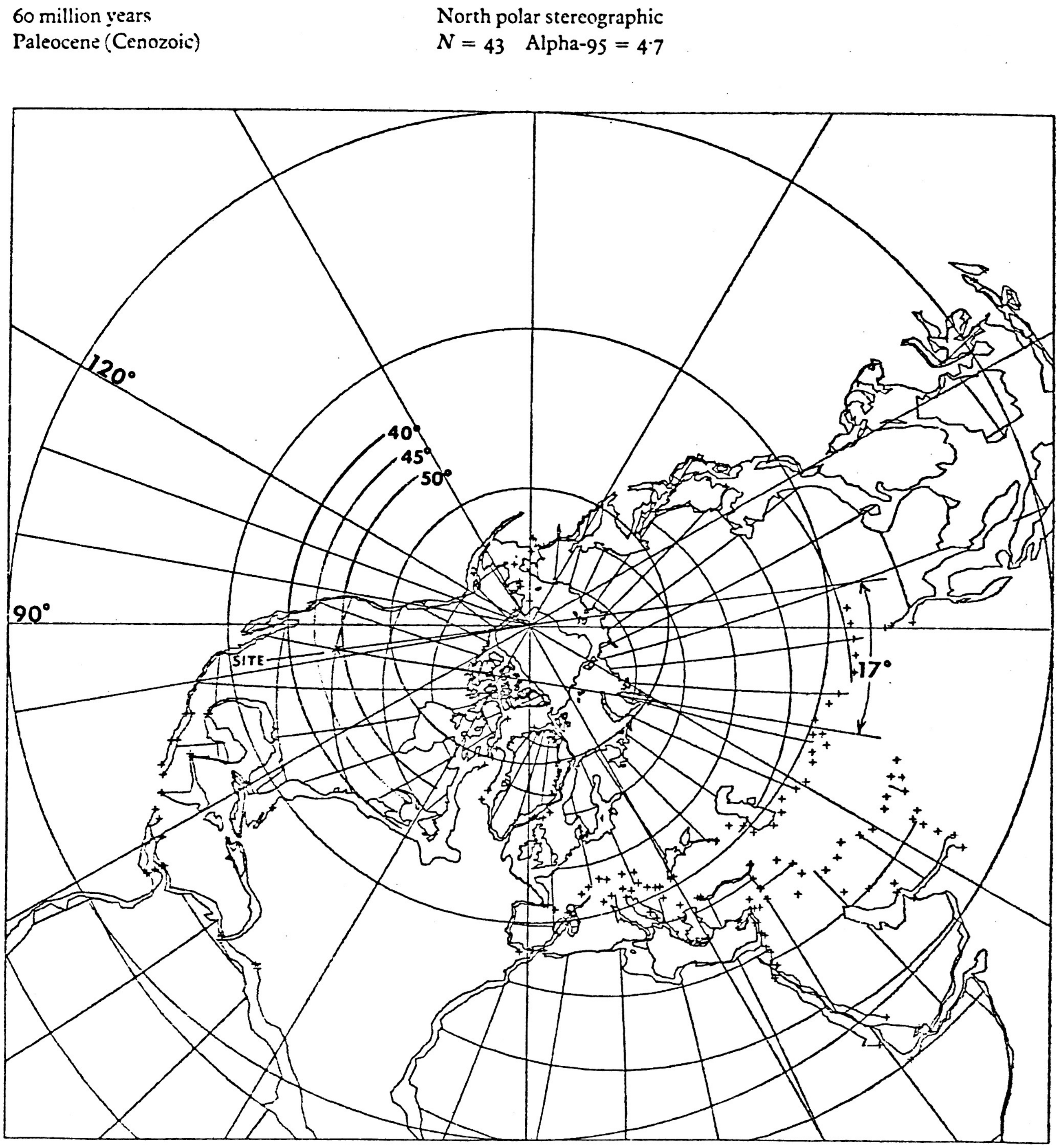
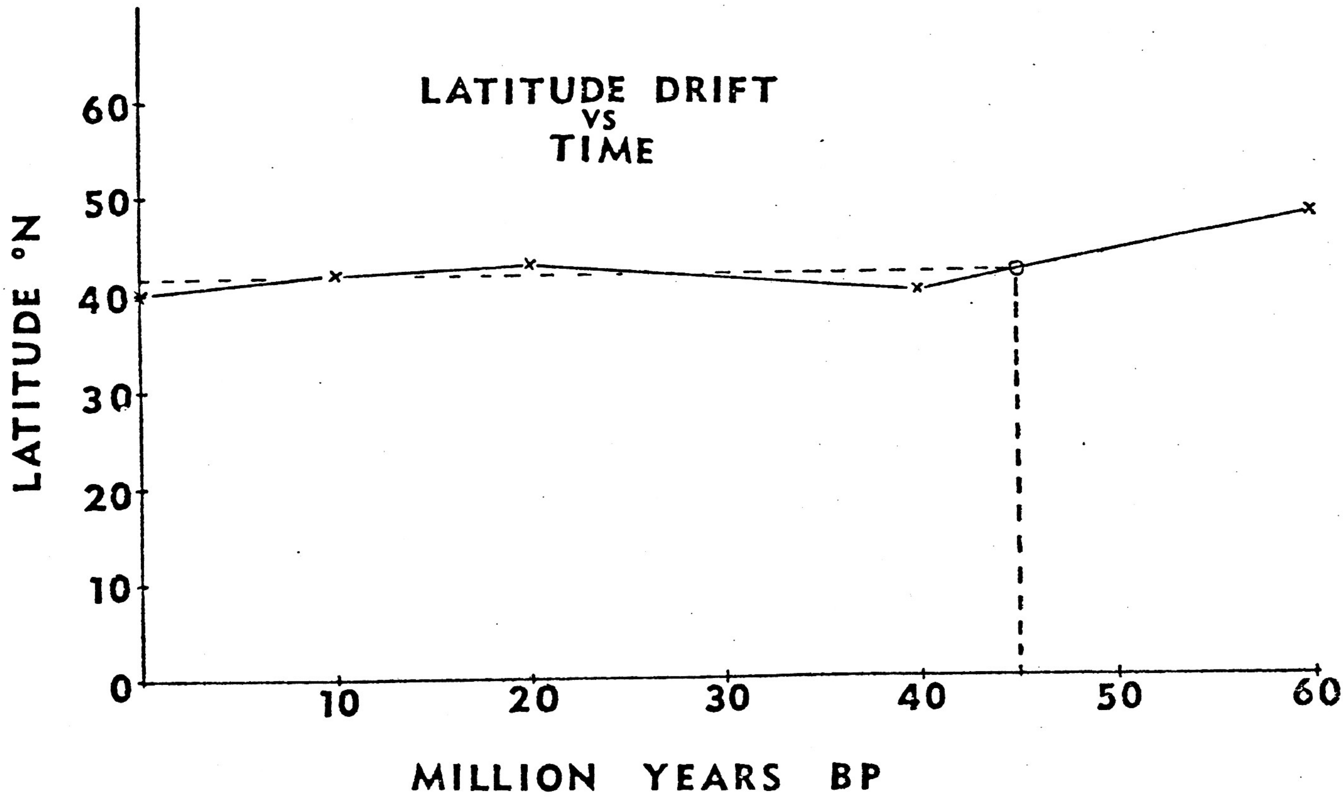
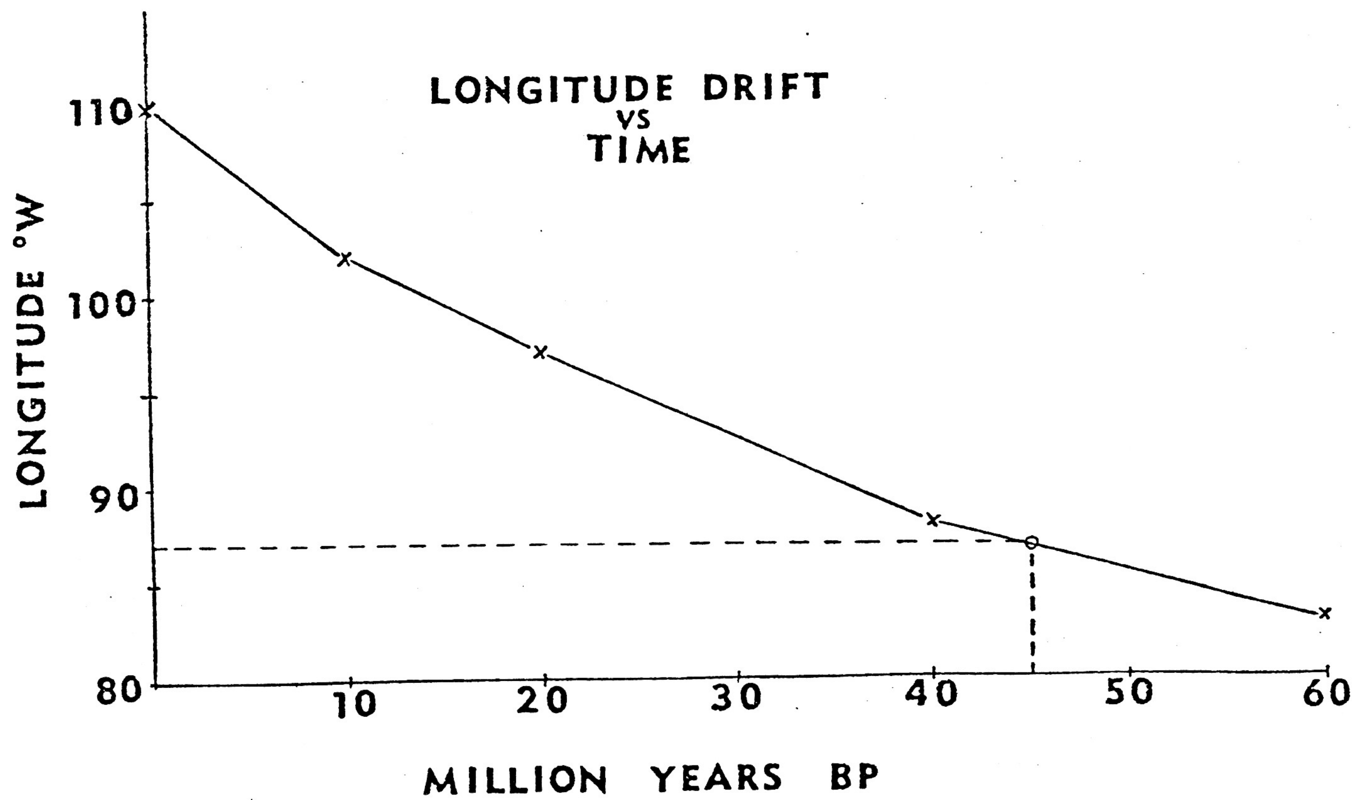


Figure 11E.---North polar stereographic map during Paleocene showing site location of approximately 48° N. latitude and 83° W. longitude with a 17° estimated declination.



Figures 12A and 12B.—Graphs of latitude (above) and longitude (below) drift verses time at site. At 45 my BP (the approximate age of the Mahogany unit) the site is 42° N. latitude and 87° W. longitude.



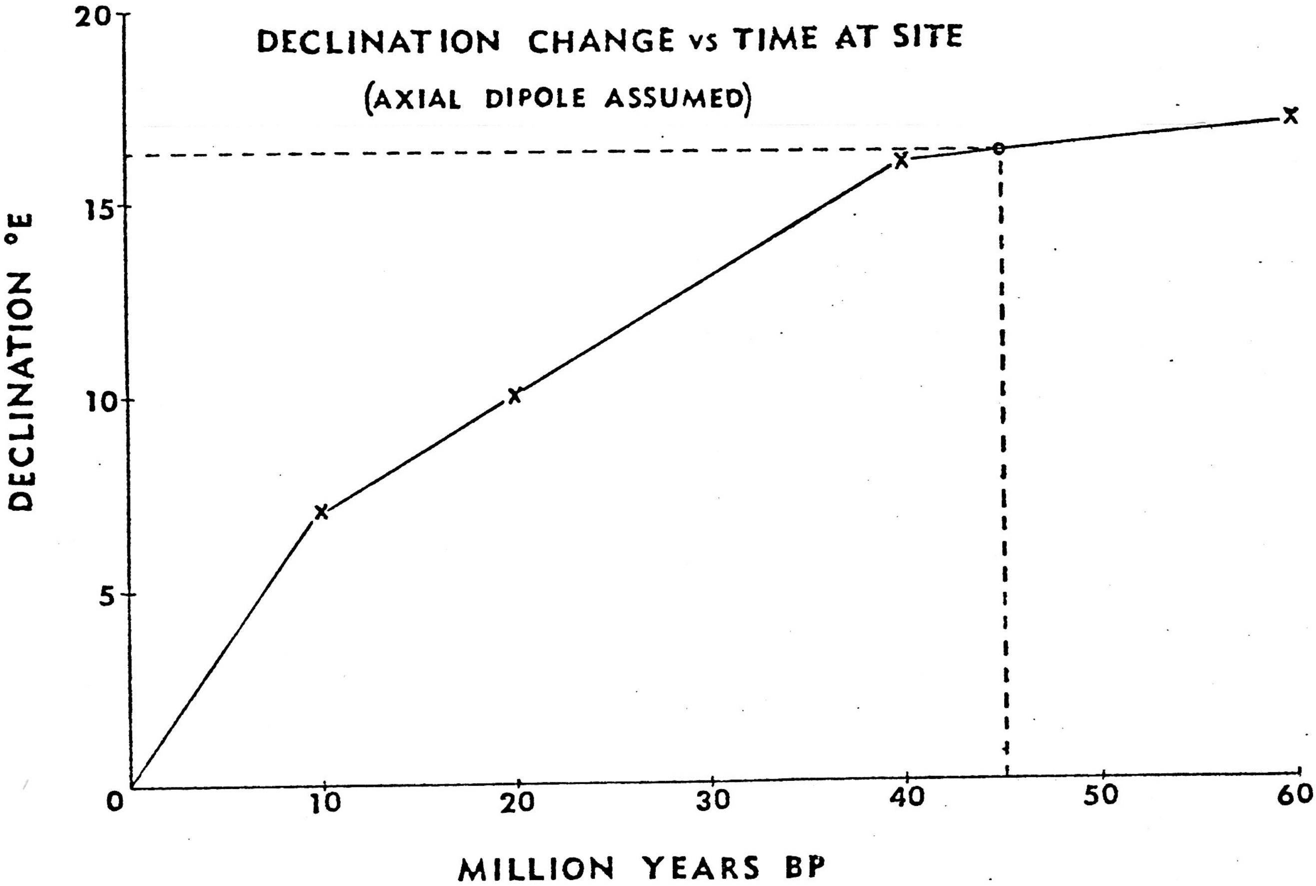


Figure 12C.—Declination change verses time at site. Declination values estimated from north polar stereographic maps of figures 11A-E. At 45 my BP (approximate age of the Mahogany unit) the declination is 16.5° East.

Figure 13.—Stereo net of paleomagnetic results of rocks of Eocene age in western United States.

A. Theoretical pole position of the Mahogany unit based on paleocontinental maps (Smith & Briden, 1977) of Early-Middle Eocene 50-45 my BP.

B. Green River Formation
C. Green River Fm, Laney Mbr.
D. Wasatch Formation
} Pole positions after Torreson et al., 1949.

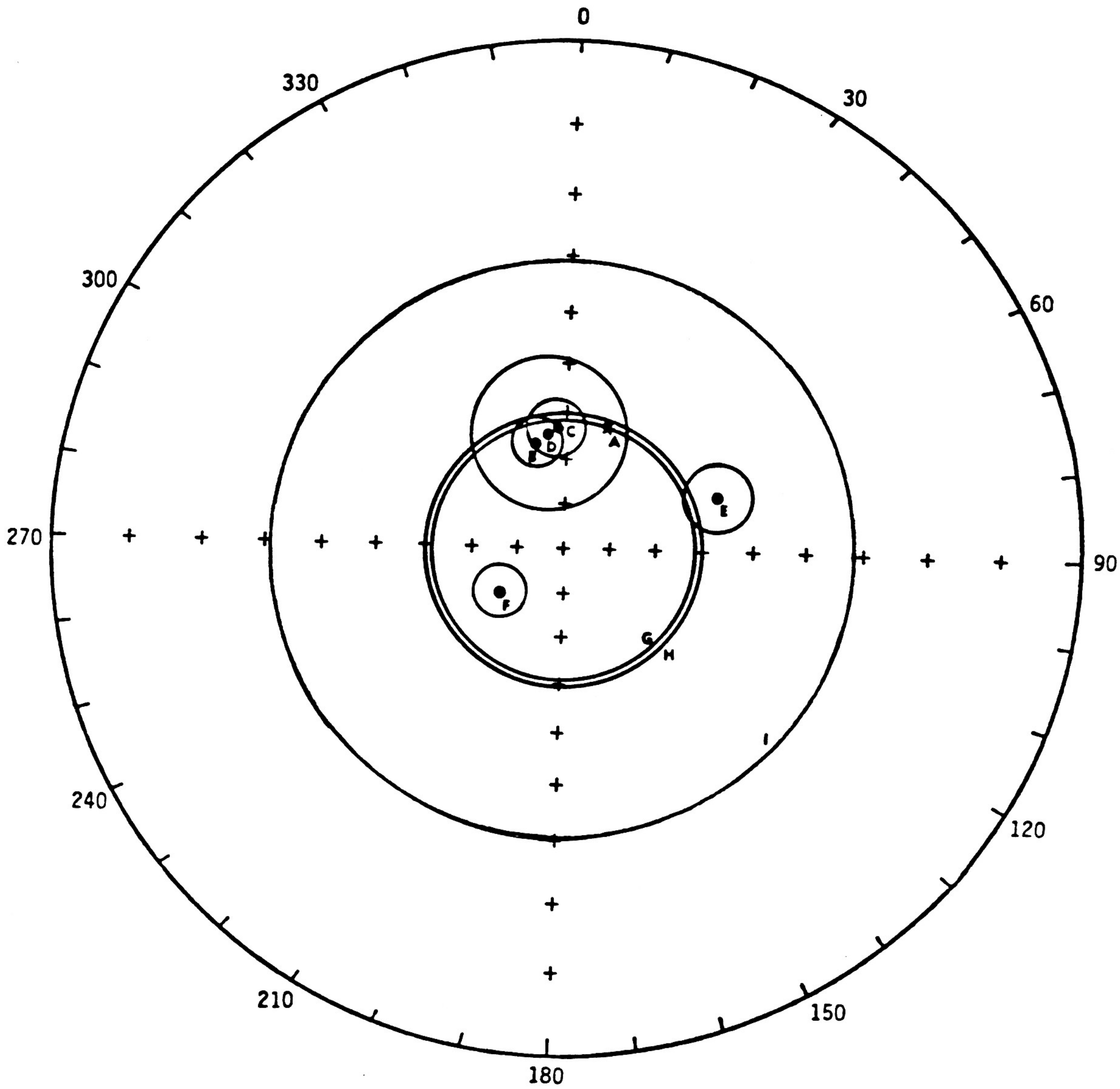
E. Siletz River Volcanic Series pole position after Cox, 1957. Probable tectonic rotation to the east.

F. Strangway & McMahon, 1973. 100 oe AF results of the Green River Fm. Strong possibility 100 oe data insufficiently demagnetized and Recent steeply dipping components remain.

G. Theoretical circle of inclination (no declination control) for the Mahogany unit calculated from the paleolatitude by the dipole formula.

H. Circle of inclination (no declination control) NRM results for the Mahogany unit.

I. Circle of inclination (no declination control) for the Mahogany unit after 400 oe demagnetization.



of the Mahogany unit. These points should be in rough agreement since they all represent rocks of similar age. Since Strangway and McMahon's results are so far out of position, as compared to A, B, C, and D, there is a strong possibility that their 100 oe AF data was insufficiently demagnetized and Recent steeply dipping components remain. Therefore, their results are questionable.

The average inclination of roughly 60° for the NRM results of the Mahogany unit falls on circle H of figure 13. After 400 oe demagnetization, the optimum demag stage, the inclination is 31° and falls on circle I. This discrepancy is believed to result from post-depositional compaction of the oil shale. The paleolatitude of 16.7° north calculated from the 31° inclination after 400 oe demagnetization is much too low. The estimated paleolatitude of the site from figures 11 A-E was 42° north latitude, 87° west longitude at 45 m.y. B.P. The present day site location is 40.3° north latitude and 110° west longitude. The site changed a fair amount in longitude but only slightly in latitude. Inclination is a function of latitude but the amount of inclination change from 42° north at 45 m.y. B.P. to 40.3° north at present of the Mahogany unit is negligible.

A simple method can be employed to estimate the compaction effect by taking the ratio of the tangents of the 400 oe inclination data and the expected initial inclination. As figure 14 shows, the magnetic minerals in the

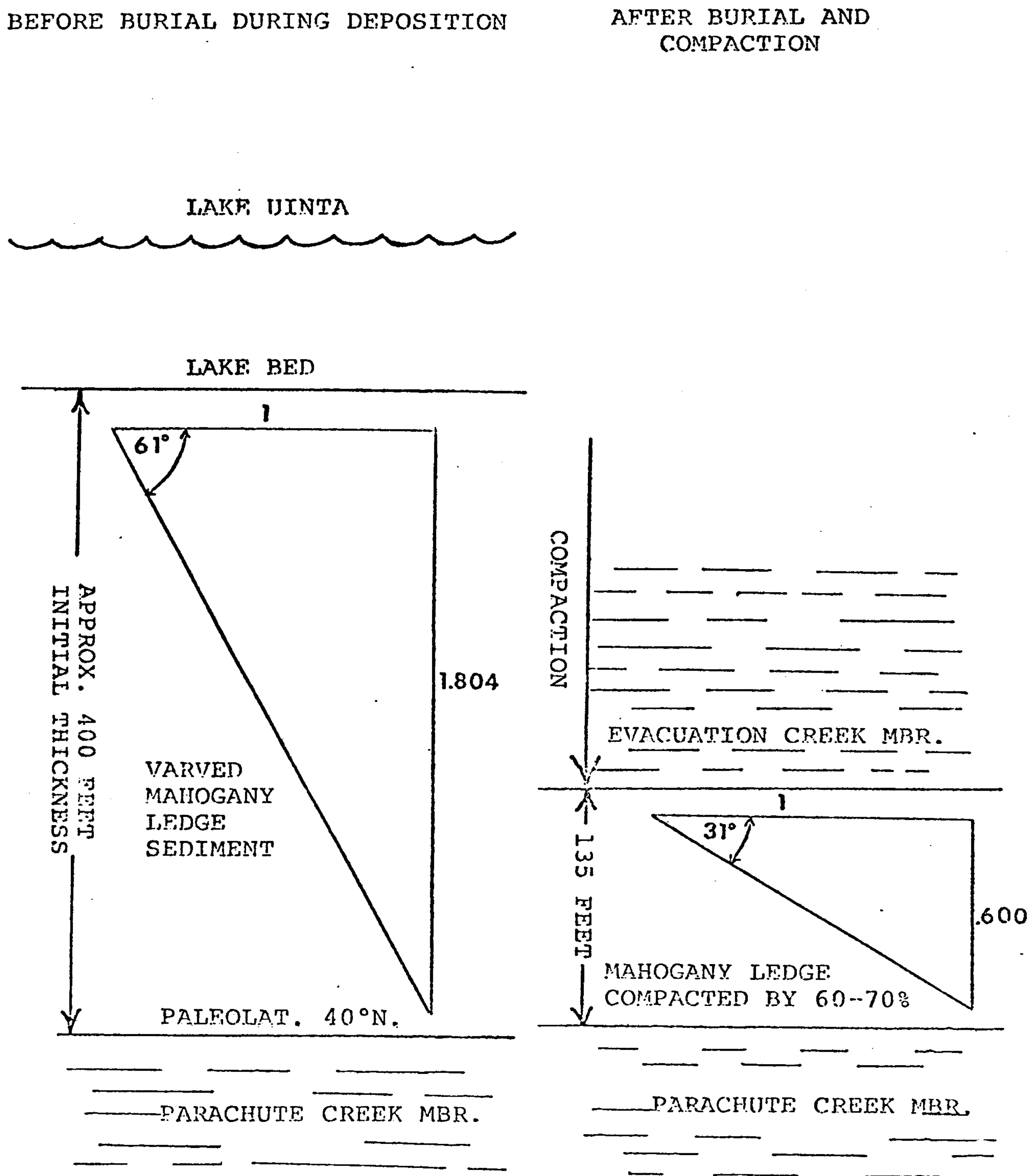


Figure 14.—Method of estimating compaction effect of sediments by observed inclination error: tan 31° (compacted inclination)/tan 61° (expected initial inclination) x 100% = 33%. The present unit is 33% of its original thickness. (1.00-.33) x 100% = 67%. The unit has been compacted by 67%. This result may be compared directly to Plate 2.

wet sediment were initially deposited and aligned in a magnetic field with 61° inclination. The DRM (detrital remanent magnetization) should exhibit this value. However, the compaction from overlying sediments (eg., superjacent Evacuation Creek Member) decreased the DRM inclination of the Mahogany sediments. After 400 oe demagnetization and exposure of the most stable magnetization the inclination was 31°. The ratio of the inclinations show the sediments are compacted to one-third their original thickness, a 67% compaction. This means the initial thickness of the Mahogany unit was approximately 400 feet and has been compacted by overlying sediments to 135 feet.

Plate 2 shows a fish coprolite in the Laney Member of the Green River Formation (sample provided by K. O. Stanley). By measuring the distance between corresponding varves across the center of the coprolite, and away from the center, the ratio directly determines the amount of compaction. The ratio of the distance at the lines indicated on plate 2 give a compaction of 62%.

Since the compaction effect, measured directly, is so close to the figure derived from the paleomagnetic results, it confirms that the DRM has been affected by compaction. That is, the primary magnetization of the Mahogany unit is carried by detrital magnetic grains, derived from the Absaroka volcanics (Surdam and Stanley, 1980) originally aligned along the earth's magnetic field in Eocene time as they settled through the water of Lake Uinta, and is not carried by post-depositional remanent magnetization (PDRM) or chemical remanent magnetism (CRM) due to diagenesis.

The mineral carrying the magnetization is believed to be fine grained magnetite. Regional volcanism during Lake Uinta time provided abundant sources of ash and tuff. These pyroclastics carry single domain magnetite and ilmenite. As indicated by figure 9, the residual remamence intensity decreases very rapidly in the first few stages of demagnetization. By 300 oe demagnetization, only 25% of the original intensity remained. This is very characteristic of single domain magnetite. Since this study has direct control on compaction, and compaction produced such low inclinations, this study suggests that marls and shales may not be useful in establishing paleolatitudes if their magnetization is primarily DRM. However, the study also shows that paleomagnetic measurements may be applied to determination of the post-depositional compaction of marls, shales and other sediments.

RATE OF DEPOSITION

The application of magnetic reversal stratigraphy to the Mahogany unit is a new and independent approach to estimating the rate of deposition which has considerable importance for the geochemical genesis of kerogen rich dolostone, commonly called "oil shale".

I have determined, from paleomagnetic data, that the Mahogany unit is dominately of normal polarity. As such, it represents all, or the major part, of a normal polarity interval in the Eocene. The recently revised marine magnetic time scale (La Brecque et al., 1977) clearly shows the general relationship of normal and reversed zones for the past 65 m.y. The first task was to identify which of the numerous normal intervals in the Eocene the Mahogany unit might represent. Once this was decided, the maximum duration of deposition is fixed by the marine magnetic time scale and radiometric age determinations.

Direct $^{40}Ar/^{39}Ar$ dating of two tuffs (O'Niell, 1980) has assigned an age of 46.5 $\pm$0.6 m.y. B.P. to the Mahogany unit in the following way. The wavy tuff above the unit was dated at 46.9 $\pm$5.0 m.y. B.P., and the curly tuff below the unit was dated at 46.2 $\pm$0.6 m.y. B.P. This assigns a weighted mean age to the enclosed Mahogany unit of 46.5 $\pm$0.6 m.y. B.P. (Figs. 15A-B). With an age of 46.5 $\pm$0.6 m.y. B.P., there is but one normal polarity interval in

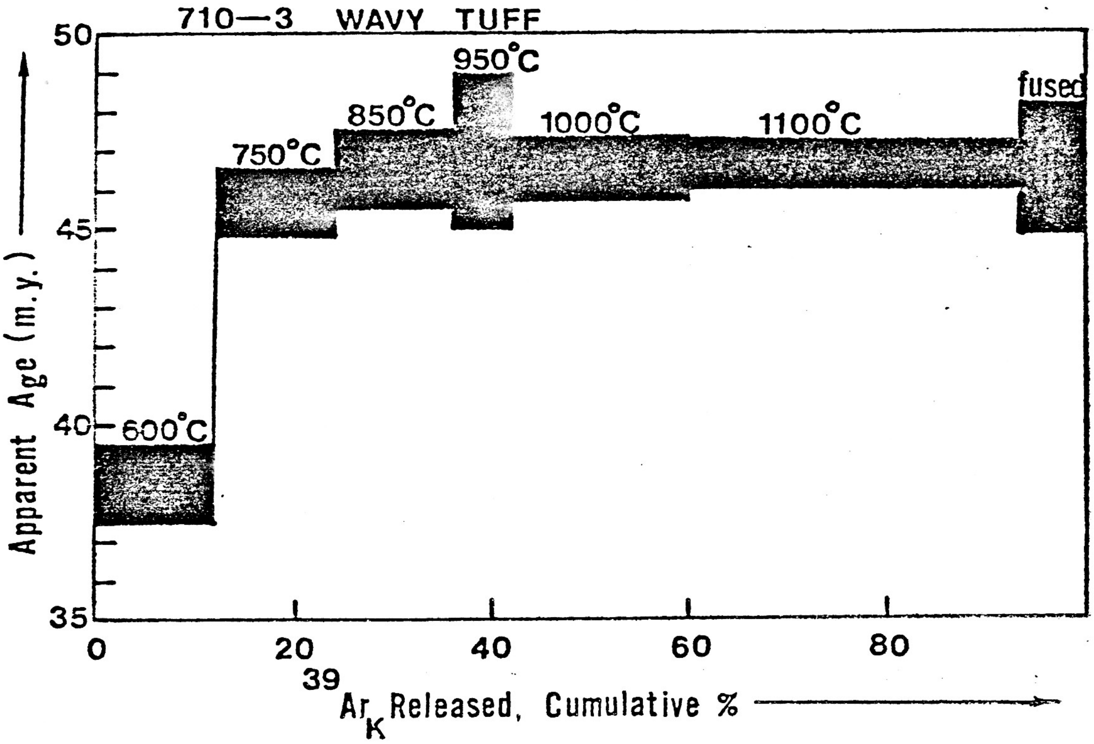


Figure 15A.—$^{40}Ar/^{39}Ar$ dates of the wavy tuff above the Mahogany unit (after O'Niell, 1980).

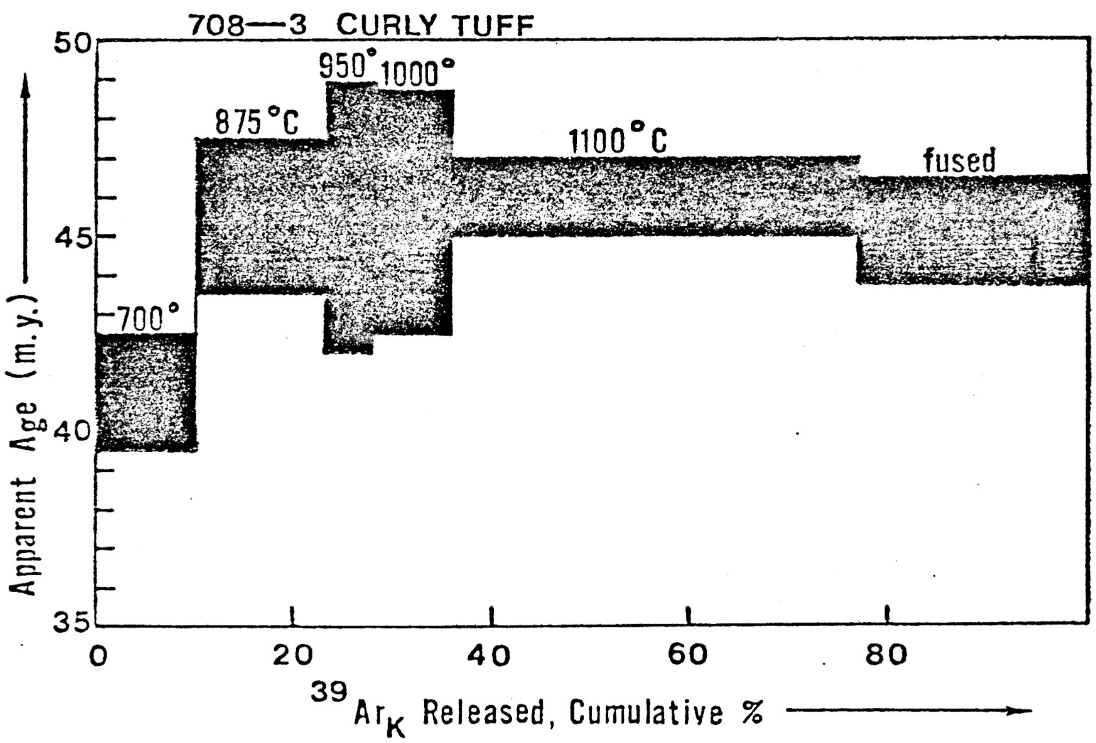


Figure 15B.—$^{40}Ar/^{39}Ar$ dates of the curly tuff at the base of the Mahogany unit (after O'Niell, 1980).

the marine magnetic time scale which matches this age as shown in table 3. It is of Middle Eocene (Late Bridgerian) age. This normal magnetic interval in the marine anomaly profile has a duration of 1.5 m.y., beginning at 46.5 m.y. B.P., and ending at 45.0 m.y. B.P. Since the age of uncertainty is 0.6 m.y. for the Mahogany unit, adding 0.6 m.y. would place the unit as a reversed polarity zone which it is not. Therefore, the age of uncertainty must be taken in the negative sense which gives a probable duration from 46.5 to 45.9 m.y. B.P. Because the section between the tuffs is thicker than the actual Mahogany unit, the unit was probably deposited within 0.5 m.y.

Dividing the present thickness by the probable duration of deposition gives the minimum deposition rate, not corrected for compaction. It is 135 feet (41.1 meters) divided by 500,000 years or 0.0822 mm/yr. The unit has well developed very thin laminations and each pair has been assumed to represent a year of deposition. On this basis, each annual lamina pair should be 0.0822 mm thick or 0.0411 mm per lamina. Bradley (1929) estimated an annual lamina pair thickness of 0.037 mm.

Since I know the approximate compaction of the unit from two independent sources, I can estimate the deposition rate of the wet sediments. The initial uncompacted thickness was 400 feet (123.1 meters). Dividing this by 500,000 years gives an initial annual lamina pair thickness of

0.246 mm corresponding to a sedimentation rate of 24.6 mm/century. This is three times the deposition rate estimated from the compacted sediments. This same factor will apply to Bradley's estimate, although he did not correct for compaction (Bradley might have quoted a 0.111 mm annual pair thickness or a sedimentation rate of 11.1 mm/century if he had accounted for compaction). Neither Bradley's figure nor mine can be accurate for the entire depositional history of the Green River Formation and cannot, by any means, represent all depositional localities. However, I believe my estimate of the annual lamina pair thickness and actual depositional rate is the more valid one. These results also generally confirm the validity of the earlier assumption that the laminae are annual varves.

DURATION OF REVERSED POLARITY ZONES

Since a deposition rate has been established and the thickness of each zone of reversed polarity is known (Fig. 10), the average duration of each polarity reversal can be calculated by dividing the compacted thickness by the appropriate deposition rate. Using the minimum deposition rate of the compacted sediment (0.0822 mm/yr), the average duration of 7 thin reversed zones in figure 10 is 990 years. Two thicker reversed zones occurring at 7526 feet and 7626 feet are of 2818 years and 4079 years, respectively. These are just long enough to qualify as true polarity reversals (Cox, 1969).

The duration of the 7 thin reversed polarity zones is characteristic of the duration of excursions of the earth's dipole field, when the earth's north magnetic pole rapidly migrates to, or near, the equator and then quickly returns to it's original near polar position within a few centuries (Yaskawa et al., 1973; Noltimier and Colinvaux, 1976).

The two thicker reversed polarity zones (2818 and 4079 years respectively) are of sufficient duration to be classified as magnetic events or short term reversals. The two are separated by 100 feet of compacted sediment, with the thickest magnetic event near the bottom of the core. These two events should be traceable laterally across many sedimentary units, provided there was continuous deposition and no erosion, and may be useful reference polarity zones for future studies of paleomagnetic reversal stratigraphy.

CONCLUSIONS

In conclusion, this study has shown that the Mahogany unit is dominately of normal polarity dating between 46.5 and 45.0 m.y. B.P., corresponding well with marine magnetic anomaly 20 of Middle Eocene (Late Bridgerian) age. 7 thin reversed polarity zones are characteristic of brief excursions of the earth's dipole field, while two thicker reversed polarity zones are of sufficient duration to be magnetic events. These events are useful reference polarity zones for future paleomagnetic studies of Middle Eocene sediments.

This study benefited from direct control on the post depositional compaction, and the results suggest that marlstones and shales may not be useful in establishing paleolatitude if the magnetization is primarily DRM. However, this study shows instead that paleomagnetic measurements may be applied to determination of the post-depositional compaction of marls, shales, and other sediments.

Successive AF demagnetization tests established the most stable DRM component in the core. This stable component has half the expected paleomagnetic inclination. Direct measurement of the varve separation around a fish coprolite in a hand sample permitted direct measurement of total compaction. Both results are consistent and indicate that compaction has occurred. The initial thickness of the Mahogany unit was 400 feet and has undergone post depositional compaction to its present thickness of 135 feet. Based on paleomagnetic reversal stratigraphy and radiometric dating, the unit was deposited during a 0.5 m.y. normal polarity interval with an average age of 46 m.y. B.P. A sedimentation rate of 24.6 mm/century for the uncompacted sediment was determined.

REFERENCES

Abbot W., 1957. Tertiary of the Uinta Basin: Intermountain Assoc. Petrol. Geol. Guidebook 8, p. 102-109.

Berggren. W.A., 1969. Cenozoic Chronostratigraphy, Planktonic Forminiferal Zonation and the Radiometric Time Scale: Nature, v. 24, p. 1072-1075.

Bradley, W.H., 1929. The Varves and Climate of the Green River Epoch: U. S. Geol. Surv. Prof. Pap. 158, p. 87-110.

Briden, J.C., 1972. A Stability Index of Remanent Magnetism: Jour. Geophys. Res., v. 77, no. 8, p. 1401-1405.

Cairn, R., 1979. Energy's Coat of Many Colors: Synthetic and Alternate Fuel: The Orange Disc, v. 23, no. 11, 35 pp.

Cashion, W.B., 1964. Distribution and Quality of Oil Shale in the Green River Formation of the Uinta Basin: Intermountain Assoc. Petrol. Geol. Guidebook 15, p. 209-212.

Covington, R.F., 1976. Oil Impregnated Rocks of Utah: Distribution, Geology and Reserves: Brigham Young University Geologic Studies, v. 22, part 3, p. 143-150.

Cox, A., 1957. Remanent Magnetism of Lower to Middle Eocene Basalt Flows from Oregon: Nature, v. 179, p. 685-686.

Cox, A., 1963. Geomagnetic Reversals: Science, v. 163, no. 3864, p. 237-245.

Cross, A.T., and Wood, G.D., 1976. Palynology and Petrography of some Solid Bitumens of the Uinta Basin, Utah: Brigham Young University Geologic Studies, v. 22, part 3, p. 157-172.

Faber, J.A., 1979. Geomagnetic Reversal Stratigraphy and Conodont Biostratigraphy of the Middle Ordovician Trenton Limestone, Michigan Basin: Unpublished M.Sc. thesis, The Ohio State University, 80 pp.

Fenzan, R.J., 1978. A Paleomagnetic Study of a Borehole Core from the Mahogany Ledge Member of the Green River Formation: Unpublished senior thesis, The Ohio State University, 32 pp.

Fugitt, D.S., 1976. Paleomagnetic Study of Oil Shales from Central Utah. Unpublished senior thesis, The Ohio State University, 33 pp.

Hicken, A., Irving, E., Law, L.K., and Hastie, J., 1972. Catalogue of Paleomagnetic Direction and Poles: Publications of the Earth Physics Branch; v. 45, no. 1, 135 pp.

Hintz, L.F., 1973. Geologic History of Utah: Brigham Young University Geologic Studies, v. 20, part 3, Studies for Student no. 8, p. 1-181.

Karoly, W.M., 1974. Paleomagnetic Determinations of Green River Oil Shales of the Piceance Creek Basin, Colorado: Unpublished senior thesis, The Ohio State University, 40 pp.

La Breque, J.L., Kent, D.V., and Cande, S.C., 1977. Revised Magnetic Polarity Time Scale for Late Cretaceous and Cenozoic Time: Geology, 5, p. 330-335.

Marchant, L.C., 1976. Oil Impregnated Rocks of Utah: USERDA Field Experiment to Recover Oil from Tar Sands: Brigham Young University Geologic Studies, v. 27, part 3, p. 151-155.

McDonald, R.E., 1972. Eocene and Paleocene Rocks of the Southern and Central Basins: Rocky Mountain Assoc. Geol. Atlas of the Rocky Mountain Region, p. 243-256.

McElhinny, M.W., 1973. Paleomagnetism and Plate Tectonics: Cambridge University Press, 358 pp.

Noltimier, H.C., and Colinvaux, P.A., 1976. Geomagnetic Excursions from Imuruh Lake, Alaska: Nature, v. 259, p. 197-200.

O'Niell, W.A., 1980. $^{40}Ar/^{39}Ar$ Dating of Selected Tuffs of the Green River Formation, Wyoming, Colorado, and Utah: Unpublished M.Sc. thesis, The Ohio State University,100 pp.

Ryder, R.T., Fouch, T.D., and Elison, J.H., 1976. Early Tertiary Sedimentation in the Western Uinta Basin, Utah: Geol. Soc. Am. Bull. v. 87, p. 496-512.

Smith, A.G., and Briden, J.C., 1977. Mesozoic and Cenozoic Paleocontinental Maps: Cambridge University Press, 63 pp.

Smith, J.W., and Stanfield, K.E., 1964. Oil Yields and Properties of Green River Oil Shales in Uinta Basin, Utah: Intermountain Assoc. Petrol. Geol. Guidebook 15, p. 213-220.

Spieker, E.M., 1946. Late Mesozoic and Early Cenozoic History of Central Utah: U. S. Geol. Surv. Prof. Pap. 205-D, p. 117-161.

Stanley, K.O., and Collinson, J.W., 1979. Depositional History of Paleocene-Lower Eocene Flagstaff Limestone and Coeval Rocks, Central Utah: Am. Assoc. Petrol. Geol. Bull., v. 63, no. 3, p. 311-323.

Strangway, D.W., and McMahon, B.E., 1973. Paleomagnetism of Annually Banded Eocene Green River Sediments: Jour. Geophys. Res. v. 78, p. 5237-5245.

Surdam, R.C., and Stanley, K.O., 1979. Lacustrine Sedimentation During the Culminating Phase of Eocene Lake Gosiute, Wyoming (Green River Formation): Geol. Soc. Am. Bull. part 1, v. 90, p. 93-110.

Surdam, R.C., and Stanley, K.O., 1980. Effects of Changes in Drainage-Basin Boundaries on Sedimentation in Eocene Lakes Gosiute and Uinta of Wyoming, Utah, and Colorado: Geology, v. 8, p. 135-139.

Torreson, O.W., Murphy, T., and Graham, J.W., 1949. Magnetic Polarization of Sedimentary Rocks and the Earth's Magnetic History: Jour. Geophys. Res., v. 54, p. 111.

Watkins, N.D., 1972. Review of the Development of the Geomagnetic Polarity Time Scale and Discussion of Prospects for its Finer Defination: Geol. Soc. Am. Bull., v. 83, no. 3, p. 551-574.

Yaskawa, K., Nakajima, T., Kawai, N., Torii, M., Natsuhara, N., and Horie, S., 1973. Paleomagnetism of a Core from Lake Biwa (I): Jour. Geomag. Geoelectr., 25, p. 447-474.

PLATE 1

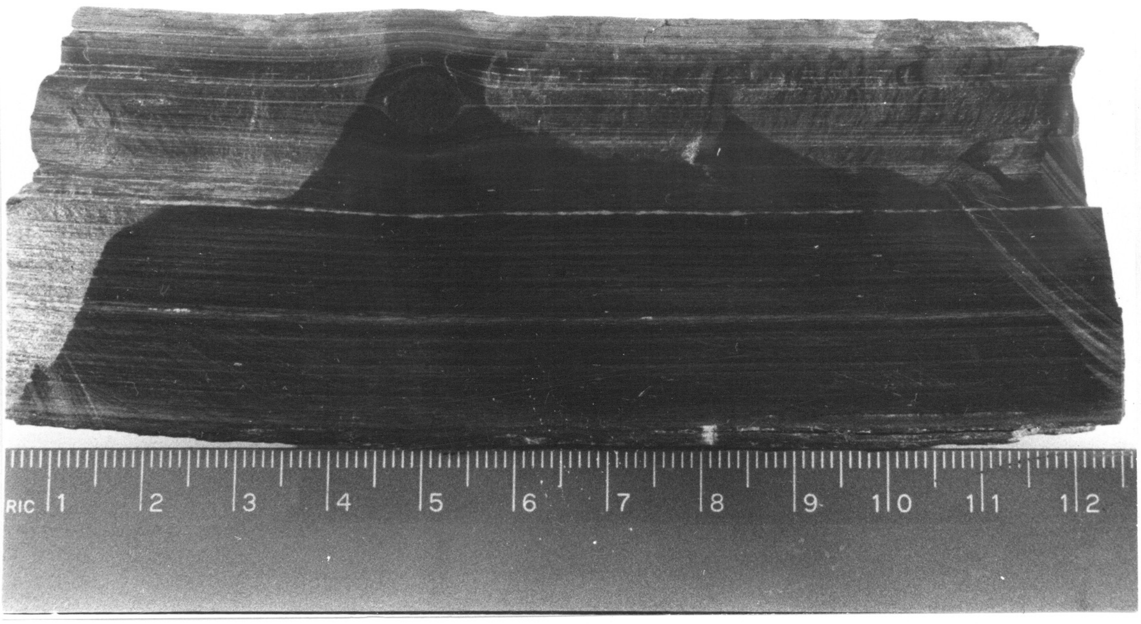


Figure 1. Hand sample of an oil shale from the Laney Member of Green River Formation showing fish coprolite in upper left center. Continuity of varves above and below the coprolite was used to calculate compaction effect of the sediment. Sample collected by K. O. Stanley, Ohio State University.

PLATE 2

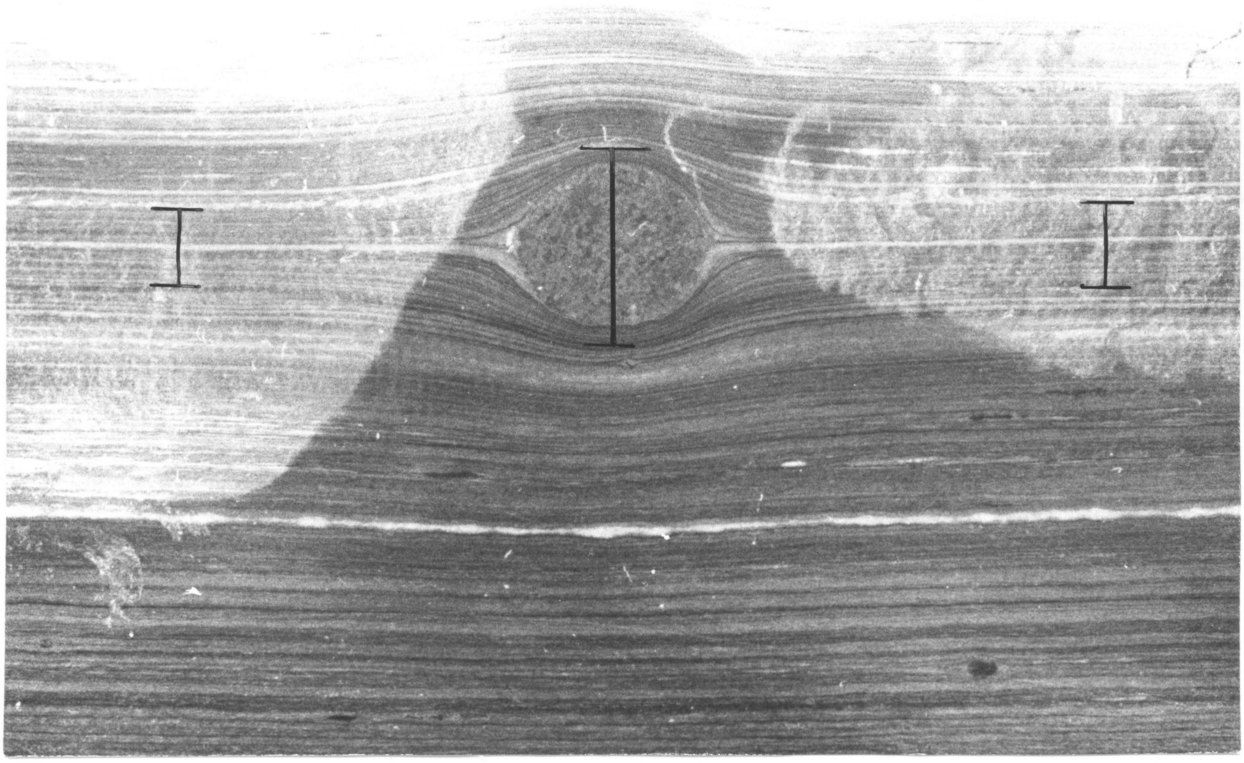


Figure 2. Close-up view of hand sample showing continuity of varves above and below fish coprolite. Ratio of distance between corresponding varves across center of coprolite and away to the sides indicate a 62% compaction effect.

APPENDIX A

The following is a printout of the borehole computer program. The program was originally written by B. Elwood. R. C. Bartman later greatly modified the program enabling it to process more data, print out the demagnetization graph, Briden Stability Index, inclination, and paleolatitude. Processing was performed at The Ohio State University computer facilities.

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            C     *******************************************                            00000500
            C     * THE MAIN PROGRAM (BORE HOLE PROGRAM) WAS  *                          00000600
            C     * ORIGINALLY WRITTEN BY B. ELLWOOD. SUB-    *                          00000700
            C     * SEQUENT MODIFICATIONS AND ADDITIONS WERE  *                          00000800
            C     * MADE BY BOB BARTMAN 1978-1980.            *                          00000850
            C     *******************************************                            00000900
            C                                                                            00001000
            C     THE BORE HOLE PROGRAM IS ONLY USED WHEN THE X DIRECTION OR UP         00001100
            C     HOLE DIRECTION IS KNOWN. BOTH Y AND Z DIRECTIONS HAVE BEEN RAN-        00001200
            C     DOMIZED BY ROTATION OF THE CORE EITHER DURING DRILLING OR BY          00001300
            C     SUBSEQUENT HANDLING. THIS PROGRAM CALCULATES AND OUTPUTS BOTH THE     00001400
            C     X MOMENT AND THE TOTAL MOMENT "J" FOR DIFFERENT DEMAG STAGES.         00001500
            C                                                                            00001600
            C     * DATA DECK ORDER AND SET-UP ***********************************00001700
            C     * A.  ID CARD - COLS. 1-3 PUNCH YYY                                  *00001800
            C     * B.  TREATMENT CARD - COLS. 1-3 PUNCH XXX                           *00001900
            C     *                    - COLS. 9-11 PUNCH 000 FOR NRM DATA, 100 FOR   *00002000
            C     *                              1000E DATA, ETC.                      *00002100
            C     *                    - COL.  13 PUNCH AN "A" FOR A.F. DEMAG.,        *00002200
            C     *                               "T" FOR THERMAL DEMAG. OR AN "N"     *00002300
            C     *                               IF YOU DO NOT WANT THE GRAPH.        *00002400
            C     *                    - COL.  15 PUNCH A "B" FOR THE BRIDEN INDEX     *
            C     *                               OR AN "N" IF THE INDEX IS NOT        *
            C     *                               DESIRED.                             *
            C     *                    - COL.  17 INSERT AN "I" FOR A PRINTOUT OF      *
            C     *                               BOTH THE INCLINATION AND PALEO-      *
            C     *                               LATITUDE. PUNCH AN "N" IF YOU        *
            C     *                               WANT TO BYPASS THIS ROUTINE.         *
            C     * C. DATA CARDS - COLS. 1-8 SAMPLE NAME                              *00002500
            C     *               - COLS. 10-80 DATA FOR THAT PARTICULAR SAMPLE        *00002600
            C     *                        USING THE FOLLOWING FORMAT---9(1X,F         *00002700
            C     *                        7.4).                                       *00002800
            C     ****************************************************************00002900
            C                                                                            00003000
            C                         *** IMPORTANT ***                                  00003100
            C     THE ID CARD IS THE FIRST CARD IN THE DATA DECK AND THE LAST.  IT IS  00003200
            C     ALSO USED TO SEPERATE GROUPS OF DATA E.G., N NO. OF FEET FROM        00003300
            C     M NO. OF FEET. BY PLACING TWO ID CARDS IN CONSECUTIVE ORDER          00003400
            C     FOLLOWED BY A TREATMENT CARD A NEW PAGE OF OUTPUT INCLUDING          00003500
            C     THE HEADING WILL BE INITIATED. TO SEPERATE DEMAGNETIZATION STAGES    00003600
            C     WITHIN ONE GROUP PLACE A ID CARD WITH XXX PUNCHED IN COLS. 1-3       00003700
            C     FOLLOWED BY A TREATMENT CARD. NRM DATA PLUS ANY FIVE DEMAG. STAGES   00003800
            C     CAN BE RUM USING THIS PROGRAM. ALWAYS HAVE THE EXACT NUMBER OF
            C     DATA CARDS IN EVERY DEMAG. STAGE AS THERE ARE IN THE NRM SET,
            C     ERRORS WILL OCCURE IN NUMEROUS PLACES IF THIS LAW IS VIOLATED.
            C                                                                            00004000
0001              INTEGER H(6)                                                           00004100
0002              DIMENSION Y(6,550),Z(6,550),TOTINT(5),A(6,550,9),X(6,550)
0003              COMMON RNT(1500),ZEAN(5),IRET(1500),MTRET(5),N,J,ANT,XNUM(6,550),R
                 *(6,550),KTRET(6),JTRAN,XNUM2(6,550)
0004              DATA NAME,CGRAPH/'NRM','N'/                                            00004600
0005              DOUBLE PRECISION SAMP(1500),TITE,PIN                                  00004700
0006         30   CONTINUE                                                               00004800
0007              DO 38 I=1,5                                                            00004900
0008              ZEAN(I)=0.0                                                            00005000
0009              TOTINT(I)=0.0                                                          00005100
0010         38   CONTINUE                                                               00005200
0011              J=1                                                                    00005300
```

```
      READ(5,5,END=99) PIN
    5 FORMAT(A8)
      GO TO 4
    8 CONTINUE
      J=J+1
    4 READ(5,1) TITE,H(J),ANT,BGRAP,CINC
    1 FORMAT(A8,I3,3(1X,A1))
      IF(H(1).EQ.0) H(1) = NAME
      N=1
    3 READ(5,2) SAMP(N),(A(J,N,I),I=1,9)
    2 FORMAT(A8,9(1X,F7.4))
      IF(SAMP(N).EQ.TITE) GO TO 8
      IF(SAMP(N).EQ.PIN) GO TO 10
      N=N+1
      GO TO 3
   10 CONTINUE
      N=N-1
      JTRAN=J
      DO 12 K=1,J
      DO 11 I=1,N
      B=(A(K,I,1)+A(K,I,7))/2.0
      X(K,I)=A(K,I,4)-B
      XNUM(K,I)=X(K,I)
      XNUM2(K,I)=X(K,I)*1.0E-4
      C=(A(K,I,2)+A(K,I,8))/2.0
      Y(K,I)=A(K,I,5)-C
      D=(A(K,I,3)+A(K,I,9))/2.0
      Z(K,I)=A(K,I,6)-D
      R(K,I)=SQRT(X(K,I)**2+Y(K,I)**2+Z(K,I)**2)*1.0E-4
   11 CONTINUE
      KTRET(K)=H(K)
   12 CONTINUE
      L=1
      DO 14 K=2,J
      DO 15 I=1,N
      RNT(L)=R(K,I)/R(1,I)
      L=L+1
   15 CONTINUE
   14 CONTINUE
      ICON=J-1
      L=1
      DO 40 M=1,ICON
      DO 17 I=1,N
      TOTINT(M)=TOTINT(M)+RNT(L)
      L=L+1
   17 CONTINUE
   40 CONTINUE
      DO 18 I=1,ICON
      ZEAN(I)=TOTINT(I)/N
   18 CONTINUE
      K=1
      DO 100 L=2,J
      DO 19 I=1,N
      IRET(K)=H(L)
      K=K+1
   19 CONTINUE
  100 CONTINUE
      K=2
```

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0070             DO 27 I=1,ICON                                                                  00010900
0071             MTRET(I)=H(K)                                                                   00011000
0072             K=K+1                                                                           00011100
0073       27    CONTINUE                                                                        00011200
0074             WRITE(6,16)                                                                     00011300
0075       16    FORMAT('1',//,45X,'CRYOGENIC MAGNETOMETER OUTPUT',/)                            00011400
0076              IF(J.EQ.1) WRITE(6,20) H(1)                                                    00011500
0077              IF(J.EQ.2) WRITE(6,21) H(1),H(2)                                               00011600
0078              IF(J.EQ.3) WRITE(6,22) H(1),H(2),H(3)                                          00011700
0079              IF(J.EQ.4) WRITE(6,23) H(1),H(2),H(3),H(4)                                     00011800
0080              IF(J.EQ.5) WRITE(6,24) H(1),H(2),H(3),H(4),H(5)                                00011900
0081              IF(J.EQ.6) WRITE(6,26) H(1),H(2),H(3),H(4),H(5),H(6)                           00012000
0082             DO 13 I=1,N                                                                     00012100
0083              IF(J.EQ.1) WRITE(6,25) SAMP(I),X(1,I),R(1,I)                                   00012200
0084              IF(J.EQ.2) WRITE(6,32) SAMP(I),X(1,I),R(1,I),X(2,I),R(2,I)                     00012300
0085              IF(J.EQ.3) WRITE(6,33) SAMP(I),X(1,I),R(1,I),X(2,I),R(2,I),X(3,I),00012400
                1R(3,I)                                                                          00012500
0086              IF(J.EQ.4) WRITE(6,34) SAMP(I),X(1,I),R(1,I),X(2,I),R(2,I),X(3,I),00012600
                1R(3,I),X(4,I),R(4,I)                                                            00012700
0087              IF(J.EQ.5) WRITE(6,35) SAMP(I),X(1,I),R(1,I),X(2,I),R(2,I),X(3,I),00012800
                1R(3,I),X(4,I),R(4,I),X(5,I),R(5,I)                                              00012900
0088              IF(J.EQ.6) WRITE(6,36) SAMP(I),X(1,I),R(1,I),X(2,I),R(2,I),X(3,I),00013000
                1R(3,I),X(4,I),R(4,I),X(5,I),R(5,I),X(6,I),R(6,I)                                00013100
0089       13     CONTINUE
0090              IF(ANT.EQ.CGRAPH) GO TO 39                                                     00013300
0091              CALL GRAPH(SAMP)
0092       39     IF(BGRAP.EQ.CGRAPH) GO TO 41
0093              CALL BRIDEN(SAMP)
0094       41     IF(CINC.EQ.CGRAPH) GO TO 37
0095              CALL INC(SAMP)                                                                 00013400
0096       37     GO TO 30
0097       20     FORMAT(' ',67X,'H=',A3,//,57X,'SAMPLE',9X,'X',6X,'J',/)
0098       21     FORMAT(' ',57X,'H=',A3,15X,'H=',I3,//,41X,'SAMPLE',9X,'X',6X,'J',1
                12X,'X',6X,'J',/)
0099       22     FORMAT(' ',47X,'H=',A3,15X,'H=',I3,13X,'H=',I3,//,31X,'SAMPLE',9X,
                1'X',6X,'J',2(12X,'X',6X,'J'),/)
0100       23     FORMAT(' ',37X,'H=',A3,3(15X,'H=',I3),//,21X,'SAMPLE',9X,'X',6X,'J
                1',3(12X,'X',6X,'J'),/)
0101       24     FORMAT(' ',27X,'H=',A3,4(15X,'H=',I3),//,11X,'SAMPLE',9X,'X',6X,'J
                1',4(12X,'X',6X,'J'),/)
0102       26     FORMAT(' ',17X,'H=',A3,15X,'H=',I3,15X,'H=',I3,15X,'H=',I3,15X,'H=00014600
                1',I3,15X,'H=',I3,//,1X,'SAMPLE',9X,'X',6X,'J',12X,'X',6X,'J',12X,'00014700
                2X',6X,'J',12X,'X',6X,'J',12X,'X',6X,'J',12X,'X',6X,'J',/)                        00014800
0103       25     FORMAT(' ',50X,A8,3X,F7.4,1X,E9.3)                                             00015000
0104       32     FORMAT(' ',40X,A8,2(3X,F7.4,1X,E9.3))                                          00015100
0105       33     FORMAT(' ',30X,A8,3(3X,F7.4,1X,E9.3))                                          00015200
0106       34     FORMAT(' ',20X,A8,4(3X,F7.4,1X,E9.3))                                          00015300
0107       35     FORMAT(' ',10X,A8,5(3X,F7.4,1X,E9.3))                                          00015400
0108       36     FORMAT(' ',A8,6(3X,F7.4,1X,E9.3))                                              00015500
0109       99     STOP                                                                           00015600
0110              END
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FORTRAN IV G1  RELEASE 2.0          GRAPH            DATE = 80140        16/53/39            PAGE 0001
 0001                SUBROUTINE GRAPH (ZAMP)                                                 00015700
 0002                COMMON RNT(1500),ZEAN(5),IRET(1500),MTRET(5),N,J,ANT,XNUM(6,550),R
                    *(6,550),KTRET(6),JTRAN
 0003                DOUBLE PRECISION ZAMP(1500),XAMP(1500)                                 00015900
 0004                DIMENSION IFMT(36),IP(11),NUM(10)
 0005                DIMENSION J3(10)
 0006                DIMENSION PAT(62,82), Y(61), X(10,2), Z(500,2), Q(10,2)                00016000
 0007                DATA PAT/5084*0.0/,Z/1000*0.0/,X/20*0.0/                               00016200
 0008                DATA YYY,DDD,ZZZ,EEE/'C','4','D','5'/                                  00016300
 0009                DATA QQQ,QZZ,AZZ,ABB,BUT,BAT/'F','7','G','8','H','9'/                  00016400
 0010                DATA ICOUNT,EXX,RES,FXX,AAA,BBB/0,'X','B','*','1','2'/                 00016500
 0011                DATA PLS,VBR,HBR,TRES,CCC/'+','|','-','A','3'/                         00016600
 0012                DATA FFF,GGG/'E','6'/                                                  00016700
 0013                DATA JCOUNT,A,T/0,'A','T'/                                             00016800
 0014                DATA Y(1),Y(4),Y(7),Y(10),Y(13),Y(16),Y(19),Y(22),Y(25),Y(28),Y(3100016900
                    1),Y(34),Y(37),Y(40),Y(43),Y(46),Y(49),Y(52),Y(55),Y(58),Y(61)/2.0,00017000
                    21.9,1.8,1.7,1.6,1.5,1.4,1.3,1.2,1.1,1.0,0.9,0.8,0.7,0.6,0.5,0.4,0.00017100
                    33,0.2,0.1,0.0/                                                         00017200
 0015                DATA IFMT/'(1H ',',13X',',   ',' 05','X, I','4,  ',' 05','X, I',    00017300
                    1'4,  ',' 05','X, I','4,  ',' 05','X, I','4,  ',' 05','X, I','4,
                    2 ',' 05','X, I','4,  ',' 05','X, I','4,  ',' 05','X, I','4,
                    3,' 05','X, I','4,  ',' 05','X, I','4, )'/
 0016                DATA MULT/Z100/                                                        00017500
 0017                DATA INIT/Z40400000/                                                   00017600
 0018                DATA NUM/ZF0,ZF1,ZF2,ZF3,ZF4,ZF5,ZF6,ZF7,ZF8,ZF9/                      00017700
               C     ***********************************************************************00017800
               C     * THIS SUBROUTINE PLOTS THE INTENSITY (J/J(0)) AND THE MEAN           *00017900
               C     * INTENSITY ON A DEMAGNETIZATION GRAPH (J/J(0) VS TREATMENT).          *00018000
               C     * THE TREATMENT I.E., A.F. OR THERMAL IS SPECIFIED BY PUNCHING         *00018100
               C     * EITHER A "A" OR "T" IN COL. 13 OF THE TREATMENT CARD. CLOSELY        *00018200
               C     * FOLLOW ALL INSTRUCTIONS GIVEN AT THE BEGINNING OF THIS PROGRAM*00018300
               C     * AS TO THE FORMAT OF BOTH THE ID AND TREATMENT CARDS.                 *00018400
               C     ***********************************************************************00018500
               C                                                                            00018600
               C     ***********************************************************************00018700
               C     * CREATE BORDER                                                        *00018800
               C     ***********************************************************************00018900
 0019                NAT=N                                                                  00019000
 0020                NCOUNT=J-1                                                             00019100
 0021                JCOUNT=NAT*NCOUNT                                                      00019200
 0022                DO 50 I=1,61                                                           00019300
 0023                DO 51 J=1,82                                                           00019400
 0024                PAT(I,J)=0.0                                                           00019500
 0025          51    CONTINUE                                                               00019600
 0026          50    CONTINUE                                                               00019700
 0027                I=1                                                                    00019800
 0028                DO 47 K=1,NCOUNT                                                       00019900
 0029                DO 48 L=1,NAT                                                          00020000
 0030                XAMP(I)=ZAMP(L)                                                        00020100
 0031                I=I+1                                                                  00020200
 0032          48    CONTINUE                                                               00020300
 0033          47    CONTINUE                                                               00020400
 0034                I=61                                                                   00020500
 0035                DO 2 J=2,80                                                            00020600
 0036                PAT (I,J)=HBR                                                          00020700
 0037          2     CONTINUE                                                               00020800
 0038                J=1                                                                    00020900
 0039                DO 3 I=1,61                                                            00021000
```

```
0040             PAT (I,J)=VBR                                                          00021100
0041        3    CONTINUE                                                               00021200
0042             J=1                                                                    00021300
0043             DO 4 I=1,63,3                                                          00021400
0044             PAT (I,J)=PLS                                                          00021500
0045        4    CONTINUE                                                               00021600
0046             I=61                                                                   00021700
0047             DO 5 J=8,80,8                                                          00021800
0048             PAT (I,J)=PLS                                                          00021900
0049        5    CONTINUE                                                               00022000
0050             WRITE(6,206)                                                           00022100
0051             WRITE(6,203)                                                           00022200
0052             DO 21 I = 1,JCOUNT                                                     00022300
0053             Z(I,1)=RNT(I)                                                          00022400
0054             Z(I,2)=IRET(I)                                                         00022500
0055       21    CONTINUE                                                               00022600
0056             DO 22 I = 1,NCOUNT                                                     00022700
0057             X(I,1)=ZEAN(I)                                                         00022800
0058             X(I,2)=MTRET(I)                                                        00022900
0059             Q(I,2)=MTRET(I)                                                        00023000
0060             J3(I)=((Q(I,2)*80.)/1000)+0.5-3                                        00023100
0061             PAT(62,J3(I))=MTRET(I)                                                 00023200
0062       22    CONTINUE                                                               00023300
          C       ***************************************************************00023400
          C       * COMPUTE POINTS                                                     *00023500
          C       ***************************************************************00023600
0063             DO 6 I = 1,JCOUNT                                                      00023700
0064             I1 = (61.-(Z(I,1)*61.)/2.)+.5                                          00023800
0065             J1 =((Z(I,2)*80.)/1000)+0.5                                            00023900
0066             IF(I1.LE.0.OR.I1.GT.61) GO TO 16                                       00024000
0067             IF(J1.LE.0.OR.J1.GT.80) GO TO 16                                       00024100
0068             IF(PAT(I1,J1).EQ.EXX) GO TO 15                                         00024200
0069             IF(PAT(I1,J1).EQ.TRES) GO TO 17                                        00024300
0070             IF(PAT(I1,J1).EQ.PLS) GO TO 34                                         00024400
0071             IF(PAT(I1,J1).EQ.HBR) GO TO 35                                         00024500
0072             IF(PAT(I1,J1).EQ.YYY) GO TO 36                                         00024600
0073             IF(PAT(I1,J1).EQ.RES) GO TO 1                                          00024700
0074             IF(PAT(I1,J1).EQ.ZZZ) GO TO 43                                         00024800
0075             IF(PAT(I1,J1).EQ.FFF) GO TO 78                                         00024900
0076             IF(PAT(I1,J1).EQ.QQQ) GO TO 79                                         00025000
0077             IF(PAT(I1,J1).EQ.AZZ) GO TO 62                                         00025100
0078             PAT(I1,J1) = EXX                                                       00025200
0079             GO TO 6                                                                00025300
0080       15    PAT(I1,J1) = TRES                                                      00025400
0081             GO TO 6                                                                00025500
0082       16    ICOUNT = ICOUNT + 1                                                    00025600
0083             GO TO 6                                                                00025700
0084       17    PAT(I1,J1) = RES                                                       00025800
0085             GO TO 6                                                                00025900
0086       34    PAT(I1,J1) = EXX                                                       00026000
0087             GO TO 6                                                                00026100
0088       35    PAT(I1,J1) = EXX                                                       00026200
0089             GO TO 6                                                                00026300
0090       36    PAT(I1,J1) = ZZZ                                                       00026400
0091             GO TO 6                                                                00026500
0092       43    PAT(I1,J1) = FFF                                                       00026600
0093             GO TO 6                                                                00026700
0094       78    PAT(I1,J1) = QQQ                                                       00026800
```

```
      GO TO 6
   79 PAT(I1,J1) = AZZ
      GO TO 6
   62 PAT(I1,J1) = BUT
      GO TO 6
    1 PAT(I1,J1) = YYY
    6 CONTINUE
C      ***************************************************************
C      * COMPUTE POINTS FOR THE MEAN INTENSITY                          *
C      ***************************************************************
      DO 10 I = 1,NCOUNT
      I2 = (61.-(X(I,1)*61.)/2.)+.5
      J2 =((X(I,2)*80.)/1000)+0.5
      IF(I2.LE.0.OR.I2.GT.61) GO TO 18
      IF(J2.LE.0.OR.J2.GT.80) GO TO 18
      IF(PAT(I2,J2).EQ.EXX) GO TO 19
      IF(PAT(I2,J2).EQ.TRES) GO TO 20
      IF(PAT(I2,J2).EQ.RES) GO TO 23
      IF(PAT(I2,J2).EQ.YYY) GO TO 13
      IF(PAT(I2,J2).EQ.ZZZ) GO TO 37
      IF(PAT(I2,J2).EQ.PLS) GO TO 38
      IF(PAT(I2,J2).EQ.HBR) GO TO 39
      IF(PAT(I2,J2).EQ.FFF) GO TO 44
      IF(PAT(I2,J2).EQ.QQQ) GO TO 63
      IF(PAT(I2,J2).EQ.AZZ) GO TO 64
      IF(PAT(I2,J2).EQ.BUT) GO TO 65
      PAT(I2,J2) = FXX
      GO TO 10
   18 ICOUNT = ICOUNT + 1
      GO TO 10
   19 PAT(I2,J2) = AAA
      GO TO 10
   20 PAT(I2,J2) = BBB
      GO TO 10
   23 PAT(I2,J2) = CCC
      GO TO 10
   13 PAT(I2,J2) = DDD
      GO TO 10
   37 PAT(I2,J2) = EEE
      GO TO 10
   38 PAT(I2,J2) = FXX
      GO TO 10
   39 PAT(I2,J2) = FXX
      GO TO 10
   44 PAT(I2,J2) = GGG
      GO TO 10
   63 PAT(I2,J2) = QZZ
      GO TO 10
   64 PAT(I2,J2) = ABB
      GO TO 10
   65 PAT(I2,J2) = BAT
   10 CONTINUE
C      ***************************************************************
C      * WRITE OUT ARRAY                                                *
C      ***************************************************************
      DO 12 I=1,62
      IF(I.EQ.3) GO TO 11
      IF(I.EQ.5) GO TO 24
```

```
      IF(I.EQ.6) GO TO 25
      IF(I.EQ.7) GO TO 26
      IF(I.EQ.8) GO TO 27
      IF(I.EQ.9) GO TO 28
      IF(I.EQ.10) GO TO 29
      IF(I.EQ.11) GO TO 30
      IF(I.EQ.12) GO TO 31
      IF(I.EQ.13) GO TO 32
      IF(I.EQ.14) GO TO 33
      IF(I.EQ.15) GO TO 40
      IF(I.EQ.16) GO TO 41
      IF(I.EQ.17) GO TO 45
      IF(I.EQ.18) GO TO 46
      IF(I.EQ.19) GO TO 52
      IF(I.EQ.20) GO TO 53
      IF(I.EQ.21) GO TO 49
      IF(I.EQ.22) GO TO 76
      IF(I.EQ.23) GO TO 77
      IF(I.EQ.24) GO TO 80
      IF(I.EQ.30) GO TO 7
      IF(I.EQ.31) GO TO 8
      IF(I.EQ.32) GO TO 9
      IF(I.EQ.61.AND.ANT.EQ.A) GO TO 184
      IF(I.EQ.61.AND.ANT.EQ.T) GO TO 185
      IF(I.EQ.62) GO TO 60
      IF(MOD(I,3).EQ.1) WRITE(6,200) Y(I),(PAT(I,J),J=1,80)
      IF(MOD(I,3).NE.1) WRITE(6,201) (PAT(I,J),J=1,80)
      GO TO 12
24    WRITE(6,209) (PAT(I,J),J=1,80)
      GO TO 12
25    WRITE(6,210) (PAT(I,J),J=1,80)
      GO TO 12
26    WRITE(6,211) Y(I),(PAT(I,J),J=1,80)
      GO TO 12
27    WRITE(6,212) (PAT(I,J),J=1,80)
      GO TO 12
28    WRITE(6,213) (PAT(I,J),J=1,80)
      GO TO 12
29    WRITE(6,214) Y(I),(PAT(I,J),J=1,80)
      GO TO 12
30    WRITE(6,215) (PAT(I,J),J=1,80)
      GO TO 12
31    WRITE(6,216) (PAT(I,J),J=1,80)
      GO TO 12
32    WRITE(6,217) Y(I),(PAT(I,J),J=1,80)
      GO TO 12
33    WRITE(6,218) (PAT(I,J),J=1,80)
      GO TO 12
40    WRITE(6,219) (PAT(I,J),J=1,80)
      GO TO 12
41    WRITE(6,220) Y(I),(PAT(I,J),J=1,80)
      GO TO 12
45    WRITE(6,240) (PAT(I,J),J=1,80)
      GO TO 12
46    WRITE(6,241) (PAT(I,J),J=1,80)
      GO TO 12
52    WRITE(6,242) Y(I),(PAT(I,J),J=1,80)
      GO TO 12
```

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                                                                              00038400
0205       53   WRITE(6,243) (PAT(I,J),J=1,80)                                00038500
0206            GO TO 12                                                      00038600
0207       49   WRITE(6,244) (PAT(I,J),J=1,80)                                00038700
0208            GO TO 12                                                      00038800
0209       76   WRITE(6,245) Y(I),(PAT(I,J),J=1,80)                           00038900
0210            GO TO 12                                                      00039000
0211       77   WRITE(6,246) (PAT(I,J),J=1,80)                                00039100
0212            GO TO 12                                                      00039200
0213       80   WRITE(6,247) (PAT(I,J),J=1,80)                                00039300
0214            GO TO 12
0215       60   IPF=-4                                                        00039500
0216            DO 800 L=1,NCOUNT
0217            IXZ=J3(L)-IPF-4
0218            IPF=J3(L)
0219            IFMT(3*L+1)=INIT+MULT*NUM(IXZ/10+1)+NUM(MOD(IXZ,10)+1)
0220            IP(L)=PAT(I,J3(L))+0.5                                        00039900
0221      800   CONTINUE
0222            WRITE(6,IFMT)(IP(L),L=1,NCOUNT)
0223            GO TO 12
0224      184   WRITE(6,224) Y(I),(PAT(I,J),J=1,80)
0225            GO TO 12
0226      185   WRITE(6,226) Y(I),(PAT(I,J),J=1,80)                           00040100
0227            GO TO 12                                                      00041000
0228        7   WRITE(6,205) (PAT(I,J),J=1,80)                                00041100
0229            GO TO 12                                                      00041200
0230        8   WRITE(6,207) Y(I),(PAT(I,J),J=1,80)                           00041300
0231            GO TO 12                                                      00041400
0232        9   WRITE(6,208) (PAT(I,J),J=1,80)                                00041500
0233            GO TO 12                                                      00041600
0234       11   WRITE(6,202) (PAT(I,J),J=1,80),ICOUNT                         00041700
0235       12   CONTINUE                                                      00041800
          C      ************************************************************00041900
          C      * IF YOU DO NOT WANT A LISTING OF THE DATA THAT WAS PLOTTED IN *00042000
          C      * THE DEMAG. GRAPH THEN REMOVE THE "C" IN FRONT OF THE        *00042100
          C      * STATEMENT ---- GO TO 42                                     00042200
          C      ************************************************************00042300
          C     GO TO 42                                                      00042400
0236            WRITE(6,221)                                                  00042500
0237            DO 42 I=1,JCOUNT                                              00042600
0238            WRITE(6,222) XAMP(I),RNT(I),IRET(I)                           00042700
0239            IF(I.GT.NCOUNT) GO TO 42                                      00042800
0240            WRITE(6,223) ZEAN(I),MTRET(I)                                 00042900
0241       42   CONTINUE                                                      00043000
0242      200   FORMAT (' ',10X,F3.1,80A1)                                    00043100
0243      201   FORMAT (' ',13X,80A1)                                         00043200
0244      202   FORMAT (' ',13X,80A1,5X,'NO. OF POINTS OFF GRAPH = ',I2)      00043300
0245      203   FORMAT ('+',40X,'*** DEMAGNETIZATION GRAPH ***')              00043400
0246      204   FORMAT(' ')                                                   00043500
0247      205   FORMAT (' ',5X,'J',7X,80A1)                                   00043600
0248      206   FORMAT('1')                                                   00043700
0249      207   FORMAT (' ',5X,'/',4X,F3.1,80A1)                              00043800
0250      208   FORMAT (' ',5X,'J(0)',4X,80A1)                                00043900
0251      209   FORMAT (' ',13X,80A1,7X,'X - ONE RESULT')                     00044000
0252      210   FORMAT (' ',13X,80A1,7X,'A - TWO RESULTS')                    00044100
0253      211   FORMAT (' ',10X,F3.1,80A1,7X,'B - THREE RESULTS')             00044200
0254      212   FORMAT (' ',13X,80A1,7X,'C - FOUR RESULTS')                   00044300
0255      213   FORMAT (' ',13X,80A1,7X,'D - FIVE RESULTS')                   00044400
0256      214   FORMAT (' ',10X,F3.1,80A1,7X,'E - SIX RESULTS')
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 0257            215  FORMAT (' ',13X,80A1,7X,'F - SEVEN RESULTS')                                00044500
 0258            216  FORMAT (' ',13X,80A1,7X,'G - EIGHT RESULTS')                                00044600
 0259            217  FORMAT (' ',10X,F3.1,80A1,7X,'H - NINE RESULTS')                            00044700
 0260            218  FORMAT (' ',13X,80A1,7X,'*****************')                                00044800
 0261            219  FORMAT (' ',13X,80A1,7X,'# - MEAN INTENSITY')                               00044900
 0262            220  FORMAT (' ',10X,F3.1,80A1,7X,'1 - MEAN AND ONE RESULT')                     00045000
 0263            240  FORMAT (' ',13X,80A1,7X,'2 - MEAN AND TWO RESULTS')                         00045100
 0264            241  FORMAT (' ',13X,80A1,7X,'3 - MEAN AND THREE RESULTS')                       00045200
 0265            242  FORMAT (' ',10X,F3.1,80A1,7X,'4 - MEAN AND FOUR RESULTS')                   00045300
 0266            243  FORMAT (' ',13X,80A1,7X,'5 - MEAN AND FIVE RESULTS')                        00045400
 0267            244  FORMAT (' ',13X,80A1,7X,'6 - MEAN AND SIX RESULTS')                         00045500
 0268            245  FORMAT (' ',10X,F3.1,80A1,7X,'7 - MEAN AND SEVEN RESULTS')                  00045600
 0269            246  FORMAT (' ',13X,80A1,7X,'8 - MEAN AND EIGHT RESULTS')                       00045700
 0270            247  FORMAT (' ',13X,80A1,7X,'9 - MEAN AND NINE RESULTS')                        00045800
 0271            221  FORMAT ('1',13X,'SAMPLE',10X,'INTENSITY',10X,'TREATMENT',10X,'MEAN00045900
                     1 INTENSITY',10X,'TREATMENT')                                                00046000
 0272            222  FORMAT(' ',13X,A8,8X,E9.3,12X,I4)                                           00046100
 0273            223  FORMAT('+',70X,E9.3,14X,I4)                                                 00046200
 0274            224  FORMAT(' ',10X,F3.1,80A1,5X,'PEAK OERSTEDS AF')
 0275            226  FORMAT(' ',10X,F3.1,80A1,5X,'PEAK TEMP.-DEGREES CENTIGRADE')
 0276                 RETURN                                                                      00046600
 0277                 END                                                                         00046700
```

```
          SUBROUTINE BRIDEN(SAMP)
          COMMON RNT(1500),ZEAN(5),IRET(1500),MTRET(5),N,J,ANT,XNUM(6,550),R
         *(6,550),KTRET(6),JTRAN,XNUM2(6,550)
          DIMENSION BI(550,6),AMEAN(6)
          DOUBLE PRECISION SAMP(1500)
          DATA NRM /'NRM'/
          IF(KTRET(1).EQ.000) KTRET(1)=NRM
          M=2
          DO 1 K=1,JTRAN
          DO 2 I=1,N
          BI(I,K)=1.0-((ABS(R(K,I)-R(M,I)))/R(K,I))
    2     CONTINUE
          M=M+1
          IF(M.GT.JTRAN) GO TO 3
    1     CONTINUE
    3     ITRAN=JTRAN-1
          DO 41 I=1,ITRAN
          TOTAL=0.0
          DO 42 K=1,N
          TOTAL=TOTAL+BI(K,I)
   42     CONTINUE
          AMEAN(I)=TOTAL/N
   41     CONTINUE
          WRITE(6,12)
          IF(JTRAN.EQ.2) GO TO 4
          GO TO 5
    4     WRITE(6,20) KTRET(1),KTRET(2)
          K=1
          DO 30 I=1,N
          WRITE(6,21) SAMP(I),BI(I,K)
   30     CONTINUE
          WRITE(6,47) (AMEAN(I),I=1,ITRAN)
          GO TO 40
    5     IF(JTRAN.EQ.3) GO TO 6
          GO TO 7
    6     WRITE(6,22) KTRET(1),KTRET(2),KTRET(2),KTRET(3)
          K=1
          L=2
          DO 31 I=1,N
          WRITE(6,23)SAMP(I),BI(I,K),BI(I,L)
   31     CONTINUE
          WRITE(6,46) (AMEAN(I),I=1,ITRAN)
          GO TO 40
    7     IF(JTRAN.EQ.4) GO TO 8
          GO TO 9
    8     WRITE(6,24) KTRET(1),KTRET(2),KTRET(2),KTRET(3),KTRET(3),KTRET(4)
          K=1
          L=2
          M=3
          DO 32 I=1,N
          WRITE(6,25) SAMP(I),BI(I,K),BI(I,L),BI(I,M)
   32     CONTINUE
          WRITE(6,45) (AMEAN(I),I=1,ITRAN)
          GO TO 40
    9     IF(JTRAN.EQ.5) GO TO 10
          GO TO 11
   10     WRITE(6,26) KTRET(1),KTRET(2),KTRET(2),KTRET(3),KTRET(3),KTRET(4),
         *KTRET(4),KTRET(5)
```

```
      K=1
      L=2
      M=3
      INUM=4
      DO 33 I=1,N
      WRITE(6,27) SAMP(I),BI(I,K),BI(I,L),BI(I,M),BI(I,INUM)
   33 CONTINUE
      WRITE(6,44) (AMEAN(I),I=1,ITRAN)
      GO TO 40
   11 WRITE(6,28) KTRET(1),KTRET(2),KTRET(2),KTRET(3),KTRET(3),KTRET(4),
     *KTRET(4),KTRET(5),KTRET(5),KTRET(6)
      K=1
      L=2
      M=3
      INUM=4
      KNUM=5
      DO 34 I=1,N
      WRITE(6,29) SAMP(I),BI(I,K),BI(I,L),BI(I,M),BI(I,INUM),BI(I,KNUM)
   34 CONTINUE
      WRITE(6,43) (AMEAN(I),I=1,ITRAN)
   40 CONTINUE
   12 FORMAT('1',52X,26('*'),/,53X,'* BRIDEN STABILITY INDEX *',/,53X,26
     *('*'),/)
   20 FORMAT('0',55X,'SAMPLE',8X,A3,'-',I3,/)
   21 FORMAT(' ',55X,A8,6X,F6.2)
   22 FORMAT('0',49X,'SAMPLE',8X,A3,'-',I3,6X,I3,'-',I3,/)
   23 FORMAT(' ',49X,A8,6X,F6.2,7X,F6.2)
   24 FORMAT('0',43X,'SAMPLE',8X,A3,'-',I3,2(6X,I3,'-',I3),/)
   25 FORMAT(' ',43X,A8,6X,2(F6.2,7X),F6.2)
   26 FORMAT('0',37X,'SAMPLE',8X,A3,'-',I3,3(6X,I3,'-',I3),/)
   27 FORMAT(' ',37X,A8,6X,3(F6.2,7X),F6.2)
   28 FORMAT('0',31X,'SAMPLE',8X,A3,'-',I3,4(6X,I3,'-',I3),/)
   29 FORMAT(' ',31X,A8,6X,5(F6.2,7X))
   43 FORMAT('0',31X,'MEAN',10X,5(F6.2,7X))
   44 FORMAT('0',37X,'MEAN',10X,4(F6.2,7X))
   45 FORMAT('0',43X,'MEAN',10X,3(F6.2,7X))
   46 FORMAT('0',49X,'MEAN',10X,2(F6.2,7X))
   47 FORMAT('0',55X,'MEAN',10X,F6.2)
      RETURN
      END
```

```
      SUBROUTINE INC(SAMP)
      COMMON RNT(1500),ZEAN(5),IRET(1500),MTRET(5),N,J,ANT,XNUM(6,550),R
     *(6,550),KTRET(6),JTRAN,XNUM2(6,550)
      DIMENSION AINC(6,550),AMEAN(6),PLAT(6)
      DOUBLE PRECISION SAMP(1500)
      DATA NRM,RCF/'NRM',57.29578/
      IF (KTRET(1).EQ.000) KTRET(1)=NRM
      DO 1 I=1,JTRAN
      TOTAL=0.0
      DO 2 K=1,N
      AINC(I,K)=-1.0*(RCF*ARSIN(XNUM2(I,K)/R(I,K)))
      IF(AINC(I,K).GE.0.0)TOTAL=TOTAL+AINC(I,K)
    2 CONTINUE
      AMEAN(I)=TOTAL/N
      PLAT(I)=RCF*(ATAN(0.5*TAN(AMEAN(I)/RCF)))
    1 CONTINUE
      WRITE(6,60)
      IF(JTRAN.EQ.1) GO TO 3
      IF(JTRAN.EQ.2) GO TO 4
      IF(JTRAN.EQ.3) GO TO 5
      IF(JTRAN.EQ.4) GO TO 6
      IF(JTRAN.EQ.5) GO TO 7
      IF(JTRAN.EQ.6) GO TO 8
      GO TO 90
    3 WRITE(6,10) KTRET(1)
      DO 9 I=1,N
      WRITE(6,11) SAMP(I),AINC(1,I)
    9 CONTINUE
      WRITE(6,27) AMEAN(1),PLAT(1)
      GO TO 90
    4 WRITE(6,12) (KTRET(I),I=1,JTRAN)
      DO 14 I=1,N
      WRITE(6,13) SAMP(I),AINC(1,I),AINC(2,I)
   14 CONTINUE
      WRITE(6,28) (AMEAN(I),I=1,JTRAN),(PLAT(J),J=1,JTRAN)
      GO TO 90
    5 WRITE(6,15) (KTRET(I),I=1,JTRAN)
      DO 17 I=1,N
      WRITE(6,16) SAMP(I),AINC(1,I),AINC(2,I),AINC(3,I)
   17 CONTINUE
      WRITE(6,29) (AMEAN(I),I=1,JTRAN),(PLAT(J),J=1,JTRAN)
      GO TO 90
    6 WRITE(6,18) (KTRET(I),I=1,JTRAN)
      DO 19 I=1,N
      WRITE(6,20) SAMP(I),AINC(1,I),AINC(2,I),AINC(3,I),AINC(4,I)
   19 CONTINUE
      WRITE(6,30) (AMEAN(I),I=1,JTRAN),(PLAT(J),J=1,JTRAN)
      GO TO 90
    7 WRITE(6,21) (KTRET(I),I=1,JTRAN)
      DO 22 I=1,N
      WRITE(6,26) SAMP(I),AINC(1,I),AINC(2,I),AINC(3,I),AINC(4,I),AINC(5
     *,I)
   22 CONTINUE
      WRITE(6,31) (AMEAN(I),I=1,JTRAN),(PLAT(J),J=1,JTRAN)
      GO TO 90
    8 WRITE(6,24) (KTRET(I),I=1,JTRAN)
      DO 25 I=1,N
      WRITE(6,26) SAMP(I),AINC(1,I),AINC(2,I),AINC(3,I),AINC(4,I),AINC(5
```

```
    *,I),AINC(6,I)
 25  CONTINUE
     WRITE(6,32) (AMEAN(I),I=1,JTRAN),(PLAT(J),J=1,JTRAN)
 90  CONTINUE
 60  FORMAT('1',49X,33('*'),/,50X,'* INCLINATION AND PALEOLATITUDE *',/
    *,50X,33('*'),/)
 10  FORMAT('0',59X,'SAMPLE',5X,A3)
 11  FORMAT(' ',59X,A8,4X,F5.1,//,59X,'PALEOLAT.',1X,F5.1)
 27  FORMAT('0',59X,'MEAN',6X,F5.1,//,59X,'PALEOLAT.',1X,F5.1)
 12  FORMAT('0',55X,'SAMPLE',5X,A3,4X,I3)
 13  FORMAT(' ',55X,A8,4X,F5.1,3X,F5.1)
 28  FORMAT('0',55X,'MEAN',6X,F5.1,3X,F5.1,//,55X,'PALEOLAT.',1X,F5.1,3
    *X,F5.1)
 15  FORMAT('0',52X,'SAMPLE',5X,A3,2(4X,I3))
 16  FORMAT(' ',52X,A8,4X,F5.1,2(3X,F5.1))
 29  FORMAT('0',52X,'MEAN',6X,F5.1,2(3X,F5.1),//,52X,'PALEOLAT.',1X,F5.
    *1,2(3X,F5.1))
 18  FORMAT('0',43X,'SAMPLE',8X,A3,3(5X,I3))
 20  FORMAT(' ',43X,A8,4X,F5.1,3(3X,F5.1))
 30  FORMAT('0',43X,'MEAN',8X,F5.1,3(3X,F5.1),//,44X,'PALEOLAT.',3X,F5.
    *1,3(3X,F5.1))
 21  FORMAT('0',41X,'SAMPLE',8X,A3,4(5X,I3))
 23  FORMAT(' ',45X,A8,4X,F5.1,4(3X,F5.1))
 31  FORMAT('0',41X,'MEAN',8X,F5.1,4(3X,F5.1),//,42X,'PALEOLAT.',3X,F5.
    *1,4(3X,F5.1))
 24  FORMAT('0',41X,'SAMPLE',7X,A3,5(5X,I3))
 26  FORMAT(' ',41X,A8,4X,F5.1,5(3X,F5.1))
 32  FORMAT('0',41X,'MEAN',8X,F5.1,5(3X,F5.1),//,42X,'PALEOLAT.',3X,F5.
    *1,5(3X,F5.1))
     RETURN
     END
```

APPENDIX B

The following contains the cryogenic magnetometer output; demagnetization graphs, Briden Stability Index based on total magnetization (J) and vertical component only (X), and inclination and paleolatitude.

Lines were drawn on the magnetometer output to separate zones of normal and reversed polarity. Question marks are placed beside those zones whose polarity is in doubt. Only those zones whose polarity changed at 400 oe (H=400) or less and remained changed were distinguished. X values should be multiplied by 1×10^{-4} (SCT scaling constant) for conversion to cgs magnetic units (emu). Fifty cores are listed per page.

The demagnetization graph follows the magnetometer output. The depth interval and a curve through the mean intensity is shown. Optimum demagnetization should occur at the first significant reduction in slope.

The Briden Stability Index follows the demagnetization graphs. Values are calculated first for total magnetization (J) and then vertical component only (X). Values closest to 1.0 represent the optimum demagnetization stage. In nearly all casas, 300-400 oe represented the best demag interval.

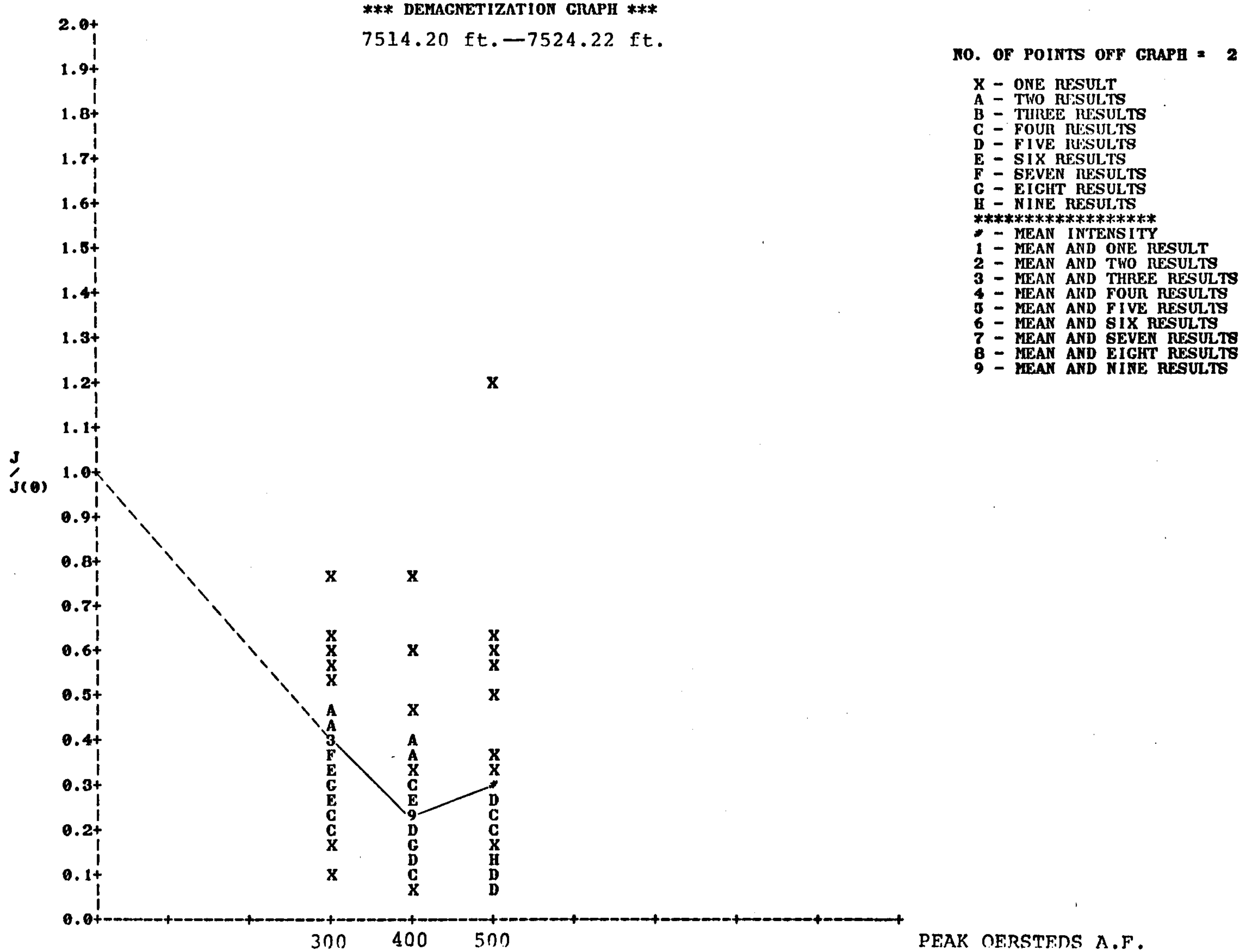
The inclination and paleolatitude follow the Briden Stability Index. The inclination is calculated from the formula: $I = \sin^{-1}[(X)(1 \cdot 10^{-4})/J]$ where I is the inclination in degrees. The paleolatitude is calculated by using the dipole formula: $\tan L = 0.5 \tan I$ where L is the paleolatitude in degrees.

CRYOGENIC MAGNETOMETER OUTPUT

SAMPLE	H=NRM X	H=NRM J	H=300 X	H=300 J	H=400 X	H=400 J	H=500 X	H=500 J
MHLD8B-B	-0.0044	0.522E-06	-0.0018	0.288E-06	-0.0006	0.201E-06	-0.0004	0.306E-06
MHLD8C-A	-0.0045	0.478E-06	-0.0021	0.220E-06	-0.0008	0.117E-06	-0.0001	0.230E-06
MHLD8C-B	-0.0135	0.158E-05	-0.0057	0.656E-06	-0.0028	0.435E-06	-0.0013	0.381E-06
MHLD8C-C	-0.0063	0.712E-06	-0.0024	0.240E-06	-0.0015	0.169E-06	-0.0006	0.921E-07
MHLD8D-A	-0.0158	0.198E-05	-0.0025	0.366E-06	-0.0015	0.320E-06	-0.0014	0.218E-06
MHLD8D-B	-0.0230	0.258E-05	-0.0058	0.699E-06	-0.0007	0.417E-06	0.0015	0.558E-06
MHLD8D-C	-0.0182	0.213E-05	-0.0063	0.754E-06	-0.0024	0.470E-06	-0.0024	0.287E-06
MHLD8E-A	-0.0212	0.232E-05	-0.0070	0.758E-06	-0.0032	0.392E-06	-0.0010	0.135E-06
MHLD9A-A	-0.0081	0.933E-06	-0.0012	0.184E-06	-0.0012	0.131E-06	-0.0004	0.860E-07
MHLD9B-A	-0.0215	0.258E-05	-0.0052	0.594E-06	-0.0032	0.325E-06	-0.0026	0.323E-06
MHLD9C-A	-0.0159	0.218E-05	-0.0028	0.703E-06	-0.0032	0.527E-06	-0.0011	0.577E-06
MHLD9C-B	-0.0168	0.179E-05	-0.0072	0.933E-06	0.0023	0.318E-06	-0.0089	0.213E-05
MHLD9D-A	-0.0449	0.629E-05	-0.0112	0.153E-05	-0.0075	0.150E-05	-0.0109	0.215E-05
MHLD9E-A	-0.0421	0.529E-05	-0.0059	0.122E-05	-0.0031	0.846E-06	-0.0007	0.614E-06
MHLD9E-B	-0.0245	0.311E-05	-0.0055	0.642E-06	-0.0015	0.437E-06	-0.0017	0.706E-06
MHLD9F-A	-0.0262	0.322E-05	-0.0029	0.148E-05	-0.0005	0.325E-06	-0.0012	0.372E-06
MHLD9F-B	-0.0370	0.494E-05	-0.0043	0.549E-06	-0.0058	0.668E-06	-0.0045	0.468E-06
MHLD9F-C	-0.0325	0.332E-05	-0.0085	0.110E-05	-0.0045	0.718E-06	-0.0023	0.517E-06
MHLD9G-A	-0.0206	0.221E-05	-0.0056	0.562E-06	-0.0017	0.184E-06	-0.0008	0.162E-06
MHLD9G-B	-0.0207	0.223E-05	-0.0021	0.575E-06	-0.0029	0.836E-06	0.0039	0.447E-06
MHLD9H-A	-0.0300	0.337E-05	-0.0101	0.118E-05	-0.0042	0.727E-06	-0.0020	0.628E-06
MHLD9H-B	-0.0298	0.337E-05	-0.0075	0.889E-06	-0.0022	0.319E-06	-0.0013	0.260E-06
MHLD9H-C	-0.0233	0.260E-05	-0.0063	0.756E-06	-0.0030	0.447E-06	-0.0009	0.372E-06
MHLD10AA	-0.0269	0.282E-05	-0.0093	0.104E-05	-0.0077	0.828E-06	-0.0072	0.751E-06
MHLD10AB	-0.0325	0.355E-05	-0.0099	0.106E-05	-0.0029	0.337E-06	-0.0016	0.252E-06
MHLD10CA	-0.0197	0.233E-05	-0.0039	0.572E-06	-0.0035	0.599E-06	-0.0026	0.267E-06
MHLD10CB	-0.0278	0.302E-05	-0.0197	0.228E-05	0.0021	0.908E-06	0.0045	0.185E-05
MHLD10CC	-0.0118	0.167E-05	-0.0045	0.575E-06	-0.0013	0.422E-06	-0.0005	0.271E-06
MHLD10DA	-0.0334	0.338E-05	-0.0115	0.118E-05	-0.0091	0.923E-06	-0.0056	0.643E-06
MHLD10DB	-0.1084	0.110E-04	-0.0185	0.196E-05	-0.0069	0.853E-06	-0.0056	0.660E-06
MHLD10DC	-0.0246	0.284E-05	-0.0070	0.114E-05	-0.0043	0.955E-06	-0.0037	0.770E-06
MHLD10DD	-0.0427	0.455E-05	-0.0114	0.120E-05	0.0039	0.172E-05	-0.0081	0.811E-06
MHLD10DE	-0.0383	0.408E-05	-0.0122	0.149E-05	-0.0093	0.109E-05	-0.0092	0.974E-06
MHLD10DF	-0.0216	0.260E-05	-0.0065	0.712E-06	-0.0036	0.479E-06	-0.0027	0.325E-06
MHLD10DG	-0.0108	0.851E-05	-0.0007	0.333E-05	0.0023	0.167E-05	-0.0029	0.132E-05
MHLD10DH	-0.0393	0.397E-05	-0.0137	0.151E-05	-0.0118	0.142E-05	-0.0101	0.102E-05
MHLD10GA	-0.0185	0.232E-05	-0.0032	0.663E-06	0.0001	0.416E-06	0.0015	0.360E-06
MHLD11AA	-0.0279	0.389E-05	-0.0146	0.160E-05	-0.0054	0.102E-05	-0.0067	0.674E-06
MHLD11BA	-0.0036	0.166E-05	0.0001	0.969E-06	0.0011	0.782E-06	0.0012	0.621E-06
MHLD11DA	-0.0069	0.726E-06	-0.0022	0.220E-06	-0.0013	0.210E-06	-0.0004	0.122E-06
MHLD11DB	-0.0097	0.991E-06	-0.0027	0.304E-06	-0.0010	0.184E-06	0.0	0.200E-06
MHLD11EA	-0.0254	0.277E-05	-0.0072	0.788E-06	-0.0029	0.597E-06	-0.0022	0.490E-06
MHLD11FA	-0.1711	0.172E-04	-0.0328	0.346E-05	-0.0223	0.239E-05	-0.0158	0.180E-05
MHLD11FB	0.0023	0.110E-05	0.0021	0.378E-05	-0.0076	0.815E-06	-0.0196	0.353E-05
MHLD11HA	-0.0169	0.238E-05	-0.0060	0.835E-06	-0.0026	0.675E-06	-0.0024	0.609E-06
MHLD11HB	-0.0250	0.338E-05	-0.0060	0.104E-05	-0.0026	0.701E-06	-0.0003	0.531E-06
MHLD11HC	-0.0175	0.292E-05	-0.0018	0.931E-06	0.0003	0.695E-06	0.0	0.450E-06
MHLD11IA	0.0003	0.154E-05	-0.0036	0.975E-06	-0.0055	0.917E-06	0.0001	0.854E-06
MHLD11JA	-0.0355	0.373E-05	-0.0107	0.130E-05	-0.0052	0.731E-06	-0.0030	0.465E-06
MHLD11JB	-0.4627	0.596E-04	-0.0755	0.167E-04	-0.0464	0.965E-05	-0.0122	0.865E-05

***** DEMAGNETIZATION GRAPH *****

7514.20 ft.—7524.22 ft.



****
* BRIDEN STABILITY INDEX *
****

Based on total magnetization (J).

SAMPLE	NRM-300	300-400	400-500
MHLD8B-B	0.55	0.70	0.47
MHLD8C-A	0.46	0.53	0.04
MHLD8C-B	0.41	0.66	0.88
MHLD8C-C	0.34	0.70	0.54
MHLD8D-A	0.18	0.88	0.68
MHLD8D-B	0.27	0.60	0.66
MHLD8D-C	0.35	0.62	0.61
MHLD8E-A	0.33	0.52	0.35
MHLD9A-A	0.20	0.71	0.66
MHLD9B-A	0.23	0.55	0.99
MHLD9C-A	0.32	0.75	0.91
MHLD9C-B	0.52	0.34	-4.70
MHLD9D-A	0.24	0.98	0.57
MHLD9E-A	0.23	0.69	0.73
MHLD9E-B	0.21	0.68	0.39
MHLD9F-A	0.46	0.22	0.86
MHLD9F-B	0.11	0.78	0.70
MHLD9F-C	0.33	0.65	0.72
MHLD9G-A	0.25	0.33	0.88
MHLD9G-B	0.26	0.55	0.54
MHLD9H-A	0.35	0.62	0.86
MHLD9H-B	0.26	0.36	0.82
MHLD9H-C	0.29	0.59	0.83
MHLD10AA	0.37	0.79	0.91
MHLD10AB	0.30	0.32	0.75
MHLD10CA	0.25	0.95	0.45
MHLD10CB	0.75	0.40	-0.03
MHLD10CC	0.34	0.73	0.64
MHLD10DA	0.35	0.78	0.70
MHLD10DB	0.18	0.43	0.77
MHLD10DC	0.40	0.84	0.81
MHLD10DD	0.26	0.56	0.47
MHLD10DE	0.37	0.73	0.89
MHLD10DF	0.27	0.67	0.68
MHLD10DG	0.39	0.50	0.79
MHLD10DH	0.38	0.94	0.72
MHLD10GA	0.29	0.63	0.87
MHLD11AA	0.41	0.64	0.66
MHLD11BA	0.58	0.81	0.79
MHLD11DA	0.30	0.95	0.58
MHLD11DB	0.31	0.60	0.91
MHLD11EA	0.28	0.76	0.82
MHLD11FA	0.20	0.69	0.75
MHLD11FB	-1.43	0.22	-2.33
MHLD11HA	0.35	0.81	0.90
MHLD11HB	0.31	0.67	0.76
MHLD11HC	0.32	0.75	0.65
MHLD11IA	0.63	0.94	0.93
MHLD11JA	0.35	0.56	0.64
MHLD11JB	0.28	0.58	0.90
MEAN	0.30	0.65	0.53

****
* BRIDEN STABILITY INDEX *
****

Based on vertical component only (X).

SAMPLE	NRM-300	300-400	400-500
MHLD8B-B	0.40	0.33	0.75
MHLD8C-A	0.45	0.41	0.12
MHLD8C-B	0.42	0.49	0.46
MHLD8C-C	0.38	0.63	0.37
MHLD8D-A	0.15	0.59	1.00
MHLD8D-B	0.25	0.11	-2.31
MHLD8D-C	0.35	0.38	1.00
MHLD8E-A	0.33	0.45	0.33
MHLD9A-A	0.15	1.00	0.32
MHLD9B-A	0.24	0.63	0.78
MHLD9C-A	0.18	0.88	0.35
MHLD9C-B	0.43	-0.32	-3.87
MHLD9D-A	0.25	0.67	0.54
MHLD9E-A	0.14	0.53	0.23
MHLD9E-B	0.22	0.27	0.87
MHLD9F-A	0.11	0.19	-0.27
MHLD9F-B	0.12	0.64	0.78
MHLD9F-C	0.26	0.53	0.52
MHLD9G-A	0.27	0.31	0.47
MHLD9G-B	0.10	0.59	-1.36
MHLD9H-A	0.34	0.42	0.47
MHLD9H-B	0.25	0.29	0.59
MHLD9H-C	0.27	0.48	0.30
MHLD10AA	0.35	0.83	0.93
MHLD10AB	0.30	0.30	0.56
MHLD10CA	0.20	0.89	0.76
MHLD10CB	0.71	-0.10	-0.20
MHLD10CC	0.38	0.30	0.41
MHLD10DA	0.35	0.79	0.61
MHLD10DB	0.17	0.37	0.80
MHLD10DC	0.29	0.62	0.85
MHLD10DD	0.27	-0.34	-2.08
MHLD10DE	0.32	0.76	0.99
MHLD10DF	0.30	0.56	0.75
MHLD10DG	0.07	-3.21	-1.27
MHLD10DH	0.35	0.86	0.86
MHLD10GA	0.17	-0.03	-13.00
MHLD11AA	0.53	0.37	0.77
MHLD11BA	-0.03	-8.50	0.90
MHLD11DA	0.32	0.59	0.31
MHLD11DB	0.28	0.36	0.0
MHLD11EA	0.28	0.40	0.76
MHLD11FA	0.19	0.68	0.71
MHLD11FB	0.89	-3.71	-0.58
MHLD11HA	0.36	0.44	0.91
MHLD11HB	0.24	0.42	0.14
MHLD11HC	0.10	-0.20	0.0
MHLD11IA	-12.00	0.46	-0.02
MHLD11JA	0.30	0.49	0.58
MHLD11JB	0.16	0.62	0.26
MEAN	0.04	0.11	-0.04

****
* INCLINATION AND PALEOLATITUDE *
****

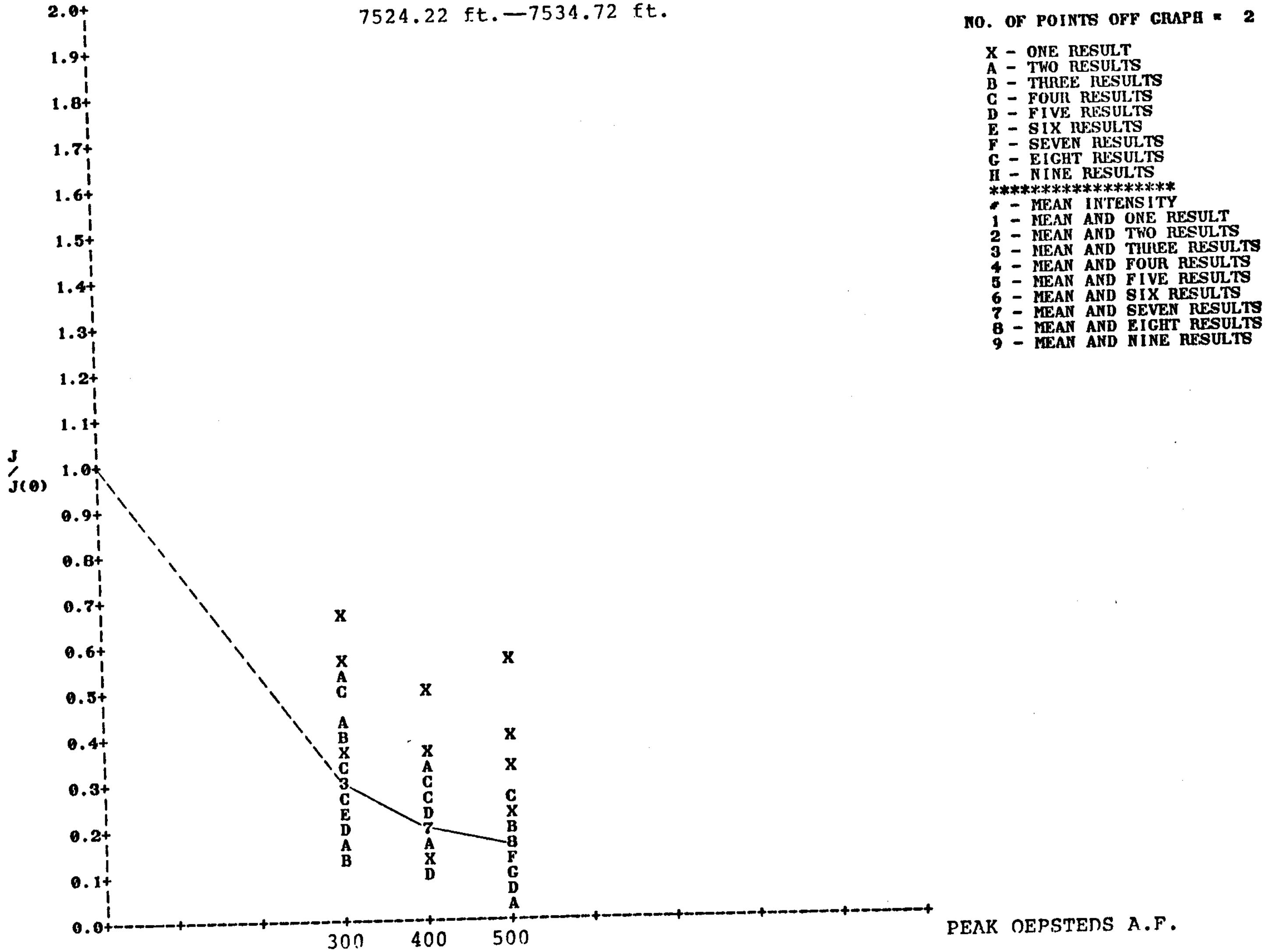
SAMPLE	NRM	300	400	500
MHLD8B-B	58.4	38.6	17.4	8.5
MHLD8C-A	72.3	68.5	46.5	2.5
MHLD8C-B	58.9	60.3	40.1	19.9
MHLD8C-C	63.0	88.3	62.5	36.7
MHLD8D-A	53.2	42.0	26.9	41.7
MHLD8D-B	63.1	56.8	9.0	-15.6
MHLD8D-C	58.9	56.7	30.7	56.7
MHLD8E-A	65.9	68.4	54.8	50.9
MHLD9A-A	60.2	42.8	72.7	27.7
MHLD9B-A	56.5	61.2	87.2	52.2
MHLD9C-A	46.5	23.5	36.7	11.0
MHLD9C-B	70.0	50.5	-46.3	24.7
MHLD9D-A	45.6	47.4	30.1	30.7
MHLD9E-A	52.8	28.9	21.5	6.5
MHLD9E-B	51.9	58.9	20.1	13.9
MHLD9F-A	54.4	11.3	9.7	19.7
MHLD9F-B	48.5	51.6	61.1	76.3
MHLD9F-C	78.0	51.0	38.8	27.0
MHLD9G-A	69.1	81.1	67.8	29.7
MHLD9G-B	68.0	20.9	20.3	-62.0
MHLD9H-A	63.1	58.8	35.8	18.6
MHLD9H-B	62.2	58.1	43.7	30.0
MHLD9H-C	63.7	56.5	42.2	14.0
MHLD10AA	72.7	63.8	69.4	73.5
MHLD10AB	66.5	69.3	61.2	40.9
MHLD10CA	57.6	43.7	35.8	82.5
MHLD10CB	66.8	60.0	-13.0	-14.1
MHLD10CC	44.8	51.5	18.6	11.7
MHLD10DA	81.2	77.8	82.5	60.6
MHLD10DB	80.4	71.0	54.6	57.2
MHLD10DC	60.3	38.1	27.1	28.7
MHLD10DD	69.6	72.2	-13.1	87.7
MHLD10DE	69.9	54.7	58.7	70.9
MHLD10DF	56.1	66.8	49.6	57.7
MHLD10DG	7.3	1.2	-7.7	12.5
MHLD10DH	82.2	64.9	56.5	83.9
MHLD10GA	52.9	28.9	-1.4	-24.6
MHLD11AA	45.9	66.3	32.3	83.6
MHLD11BA	12.4	-0.6	-7.7	-10.7
MHLD11DA	73.2	88.7	38.2	19.2
MHLD11DB	78.2	64.6	32.9	0.0
MHLD11EA	66.6	65.9	29.1	26.7
MHLD11FA	85.1	71.6	68.5	61.3
MHLD11FB	-12.0	-3.1	68.8	33.8
MHLD11HA	45.2	46.0	23.1	23.2
MHLD11HB	47.8	35.6	21.3	3.8
MHLD11HC	36.8	10.8	-2.9	0.0
MHLD11IA	-1.1	21.7	37.2	-0.7
MHLD11JA	72.0	55.6	45.9	41.0
MHLD11JB	51.0	26.8	28.8	8.1
MEAN	57.3	50.0	36.3	31.3
PALEOLAT.	37.9	30.8	20.2	16.9

CRYOGENIC MAGNETOMETER OUTPUT

SAMPLE	H=NRM X	H=NRM J	H=300 X	H=300 J	H=400 X	H=400 J	H=500 X	H=500 J
MHLD11JC	-0.0310	0.383E-05	-0.0094	0.113E-05	-0.0041	0.713E-06	-0.0007	0.336E-06
MHLD12AA	-0.0101	0.108E-05	-0.0017	0.209E-06	-0.0008	0.101E-06	-0.0005	0.877E-07
MHLD12AB	-0.0117	0.125E-05	-0.0028	0.318E-06	-0.0012	0.286E-06	-0.0003	0.131E-06
MHLD12BA	-0.0115	0.121E-05	-0.0046	0.595E-06	-0.0026	0.320E-06	-0.0009	0.190E-06
MHLD12CA	-0.0167	0.183E-05	-0.0081	0.882E-06	-0.0042	0.489E-06	0.0008	0.312E-06
MHLD12CB	-0.1013	0.112E-04	-0.0706	0.737E-05	-0.0534	0.550E-05	-0.0422	0.434E-05
MHLD12DA	-0.0383	0.398E-05	-0.0096	0.121E-05	-0.0036	0.601E-06	-0.0020	0.460E-06
MHLD12DB	-0.0269	0.271E-05	-0.0076	0.827E-06	-0.0031	0.428E-06	-0.0011	0.224E-06
MHLD12EA	0.0174	0.178E-05	0.0017	0.482E-06	0.0011	0.528E-06	0.0052	0.597E-06
MHLD12EB	0.0131	0.154E-05	0.0028	0.298E-06	0.0022	0.232E-06	0.0003	0.517E-07
MHLD12FA	0.0236	0.238E-05	0.0065	0.785E-06	0.0034	0.817E-06	0.0022	0.321E-06
MHLD12GA	-0.0358	0.360E-05	-0.0052	0.597E-06	-0.0011	0.349E-06	0.0006	0.257E-06
MHLD12GB	-0.1301	0.139E-04	-0.0521	0.747E-05	-0.0256	0.385E-05	-0.0305	0.763E-05
MHLD12HA	-0.2216	0.224E-04	-0.1036	0.123E-04	-0.0301	0.746E-05	-0.0591	0.593E-05
MHLD13AA	-0.0405	0.424E-05	-0.0140	0.167E-05	-0.0074	0.101E-05	-0.0057	0.759E-06
MHLD13BA	-0.0428	0.453E-05	-0.0120	0.120E-05	-0.0059	0.661E-06	-0.0040	0.654E-06
MHLD13CA	-0.0143	0.199E-05	-0.0045	0.470E-06	-0.0008	0.258E-06	-0.0001	0.945E-07
MHLD13CB	-0.0189	0.246E-05	-0.0021	0.367E-06	0.0008	0.256E-06	0.0005	0.211E-06
MHLD13CC	-0.0378	0.406E-05	-0.0090	0.939E-06	-0.0031	0.435E-06	-0.0012	0.252E-06
MHLD13CD	-0.0262	0.267E-05	0.0021	0.315E-06	-0.0003	0.375E-06	0.0016	0.516E-06
MHLD13EA	-0.0283	0.294E-05	-0.0079	0.842E-06	-0.0049	0.577E-06	-0.0018	0.380E-06
MHLD13FA	-0.0174	0.194E-05	-0.0053	0.952E-06	-0.0015	0.432E-06	-0.0011	0.502E-06
MHLD13GA	-0.0164	0.244E-05	-0.0040	0.768E-06	-0.0020	0.479E-06	-0.0002	0.421E-06
MHLD13HA	-0.0204	0.457E-05	-0.0048	0.133E-05	-0.0015	0.816E-06	-0.0001	0.596E-06
MHLD13KA	-0.0119	0.345E-05	-0.0056	0.143E-05	-0.0027	0.975E-06	-0.0011	0.646E-06
MHLD13LA	-0.0077	0.797E-06	-0.0024	0.418E-06	-0.0010	0.217E-06	-0.0003	0.205E-06
MHLD13MA	-0.0106	0.108E-05	-0.0027	0.356E-06	-0.0004	0.137E-06	-0.0007	0.153E-06
MHLD13MB	-0.0127	0.130E-05	-0.0031	0.365E-06	-0.0011	0.208E-06	-0.0005	0.166E-06
MHLD14AA	-0.0100	0.131E-05	-0.0007	0.177E-06	-0.0001	0.312E-06	-0.0000	0.303E-06
MHLD14AB	-0.0087	0.103E-05	-0.0009	0.187E-06	-0.0003	0.142E-06	-0.0000	0.205E-06
MHLD14BA	-0.0209	0.234E-05	-0.0030	0.442E-06	-0.0015	0.338E-06	-0.0007	0.271E-06
MHLD14CA	-0.0125	0.151E-05	-0.0006	0.361E-06	-0.0001	0.275E-06	0.0	0.210E-06
MHLD14EA	-0.0263	0.287E-05	-0.0056	0.815E-06	-0.0032	0.524E-06	-0.0012	0.382E-06
MHLD14FA	-0.0084	0.102E-05	-0.0030	0.355E-06	-0.0014	0.288E-06	-0.0005	0.176E-06
MHLD14GA	-0.0271	0.285E-05	-0.0062	0.821E-06	-0.0035	0.476E-06	-0.0019	0.318E-06
MHLD14IA	-0.0126	0.154E-05	-0.0019	0.329E-06	-0.0002	0.246E-06	0.0011	0.270E-06
MHLD14JA	-0.0156	0.182E-05	-0.0078	0.913E-06	-0.0041	0.670E-06	-0.0013	0.328E-06
MHLD14JB	-0.0159	0.171E-05	-0.0028	0.368E-06	-0.0026	0.273E-06	-0.0017	0.222E-06
MHLD14JC	-0.0181	0.190E-05	-0.0018	0.729E-06	0.0092	0.589E-06	0.0011	0.262E-06
MHLD14KA	-0.0216	0.234E-05	-0.0028	0.289E-06	0.0004	0.319E-06	0.0019	0.316E-06
MHLD14KB	-0.0238	0.283E-05	-0.0053	0.626E-06	-0.0019	0.349E-06	-0.0003	0.209E-06
MHLD15AA	-0.0169	0.224E-05	-0.0052	0.941E-06	-0.0003	0.502E-06	0.0006	0.292E-06
MHLD15AB	-0.0166	0.245E-05	-0.0064	0.698E-06	-0.0014	0.327E-06	0.0001	0.351E-06
MHLD13BA	-0.0203	0.222E-05	-0.0056	0.640E-06	-0.0008	0.323E-06	-0.0052	0.590E-06
MHLD15BB	-0.0227	0.259E-05	-0.0057	0.769E-06	-0.0014	0.440E-06	-0.0012	0.229E-06
MHLD15BC	-0.0225	0.250E-05	-0.0075	0.102E-05	-0.0028	0.500E-06	-0.0014	0.265E-06
MHLD15BD	-0.0244	0.264E-05	-0.0056	0.678E-06	-0.0022	0.429E-06	-0.0003	0.285E-06
MHLD15BE	-0.0174	0.194E-05	-0.0050	0.622E-06	-0.0014	0.413E-06	0.0000	0.240E-06
MHLD15BF	-0.0192	0.194E-05	-0.0036	0.398E-06	-0.0028	0.345E-06	-0.0029	0.300E-06
MHLD15CA	-0.0221	0.243E-05	-0.0069	0.714E-06	-0.0013	0.226E-06	-0.0005	0.178E-06

*** DEMAGNETIZATION GRAPH ***

7524.22 ft.—7534.72 ft.



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* BRIDEN STABILITY INDEX *
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Based on total magnetization (J).

SAMPLE	NRM-300	300-400	400-500
MHLD11JC	0.30	0.63	0.47
MHLD12AA	0.19	0.48	0.87
MHLD12AB	0.25	0.90	0.46
MHLD12BA	0.49	0.55	0.58
MHLD12CA	0.48	0.55	0.64
MHLD12CB	0.66	0.75	0.79
MHLD12DA	0.30	0.50	0.77
MHLD12DB	0.31	0.52	0.52
MHLD12EA	0.27	0.90	0.87
MHLD12EB	0.19	0.78	0.22
MHLD12FA	0.33	0.96	0.39
MHLD12GA	0.17	0.59	0.74
MHLD12GB	0.54	0.52	0.02
MHLD12HA	0.55	0.60	0.79
MHLD13AA	0.39	0.61	0.75
MHLD13BA	0.26	0.55	0.99
MHLD13CA	0.24	0.55	0.37
MHLD13CB	0.15	0.70	0.82
MHLD13CC	0.23	0.46	0.58
MHLD13CD	0.12	0.81	0.62
MHLD13EA	0.29	0.69	0.66
MHLD13FA	0.49	0.45	0.84
MHLD13GA	0.32	0.62	0.88
MHLD13HA	0.29	0.61	0.73
MHLD13KA	0.42	0.68	0.66
MHLD13LA	0.52	0.52	0.95
MHLD13MA	0.33	0.38	0.88
MHLD13MB	0.28	0.57	0.80
MHLD14AA	0.13	0.24	0.97
MHLD14AB	0.18	0.76	0.55
MHLD14BA	0.19	0.76	0.80
MHLD14CA	0.24	0.76	0.76
MHLD14EA	0.28	0.64	0.73
MHLD14FA	0.35	0.81	0.61
MHLD14GA	0.29	0.58	0.67
MHLD14IA	0.21	0.75	0.90
MHLD14JA	0.50	0.73	0.49
MHLD14JB	0.22	0.74	0.81
MHLD14JC	0.38	0.81	0.44
MHLD14KA	0.12	0.90	0.99
MHLD14KB	0.22	0.56	0.60
MHLD15AA	0.42	0.53	0.58
MHLD15AB	0.29	0.47	0.93
MHLD15BA	0.29	0.50	0.17
MHLD15BB	0.30	0.57	0.52
MHLD15BC	0.41	0.49	0.53
MHLD15BD	0.26	0.63	0.66
MHLD15BE	0.32	0.66	0.58
MHLD15BF	0.21	0.87	0.87
MHLD15CA	0.29	0.32	0.79
MEAN	0.31	0.63	0.67

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* BRIDEN STABILITY INDEX *
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Based on vertical component only (X).

SAMPLE	NRM-300	300-400	400-500
MHLD11JC	0.30	0.44	0.17
MHLD12AA	0.17	0.49	0.59
MHLD12AB	0.24	0.45	0.24
MHLD12BA	0.41	0.56	0.37
MHLD12CA	0.49	0.52	-0.20
MHLD12CB	0.70	0.76	0.79
MHLD12DA	0.25	0.38	0.56
MHLD12DB	0.28	0.41	0.35
MHLD12EA	0.10	0.62	-2.95
MHLD12EB	0.19	0.79	0.16
MHLD12FA	0.27	0.53	0.64
MHLD12GA	0.15	0.21	-0.50
MHLD12GB	0.40	0.49	0.81
MHLD12HA	0.47	0.29	0.04
MHLD13AA	0.35	0.53	0.77
MHLD13BA	0.28	0.49	0.69
MHLD13CA	0.31	0.19	0.12
MHLD13CB	0.11	-0.36	0.67
MHLD13CC	0.24	0.35	0.38
MHLD13CD	-0.08	-0.14	-5.33
MHLD13EA	0.28	0.62	0.37
MHLD13FA	0.30	0.28	0.73
MHLD13GA	0.24	0.50	0.12
MHLD13HA	0.24	0.32	0.03
MHLD13KA	0.47	0.50	0.40
MHLD13LA	0.31	0.42	0.35
MHLD13MA	0.26	0.13	0.14
MHLD13MB	0.24	0.35	0.45
MHLD14AA	0.08	0.07	1.00
MHLD14AB	0.11	0.37	0.00
MHLD14BA	0.14	0.53	0.48
MHLD14CA	0.05	0.08	0.0
MHLD14EA	0.22	0.57	0.39
MHLD14FA	0.36	0.47	0.36
MHLD14GA	0.23	0.55	0.54
MHLD14IA	0.15	0.13	-4.20
MHLD14JA	0.50	0.53	0.31
MHLD14JB	0.18	0.93	0.67
MHLD14JC	0.10	-0.14	-2.20
MHLD14KA	0.13	-0.16	-2.33
MHLD14KB	0.22	0.36	0.16
MHLD15AA	0.31	0.05	-2.40
MHLD15AB	0.39	0.23	-0.10
MHLD15BA	0.28	0.14	-4.56
MHLD15BB	0.25	0.25	0.86
MHLD15BC	0.33	0.37	0.50
MHLD15BD	0.23	0.39	0.16
MHLD15BE	0.29	0.28	-0.00
MHLD15BF	0.18	0.79	0.96
MHLD15CA	0.31	0.19	0.38
MEAN	0.26	0.36	-0.16

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* INCLINATION AND PALEOLATITUDE *
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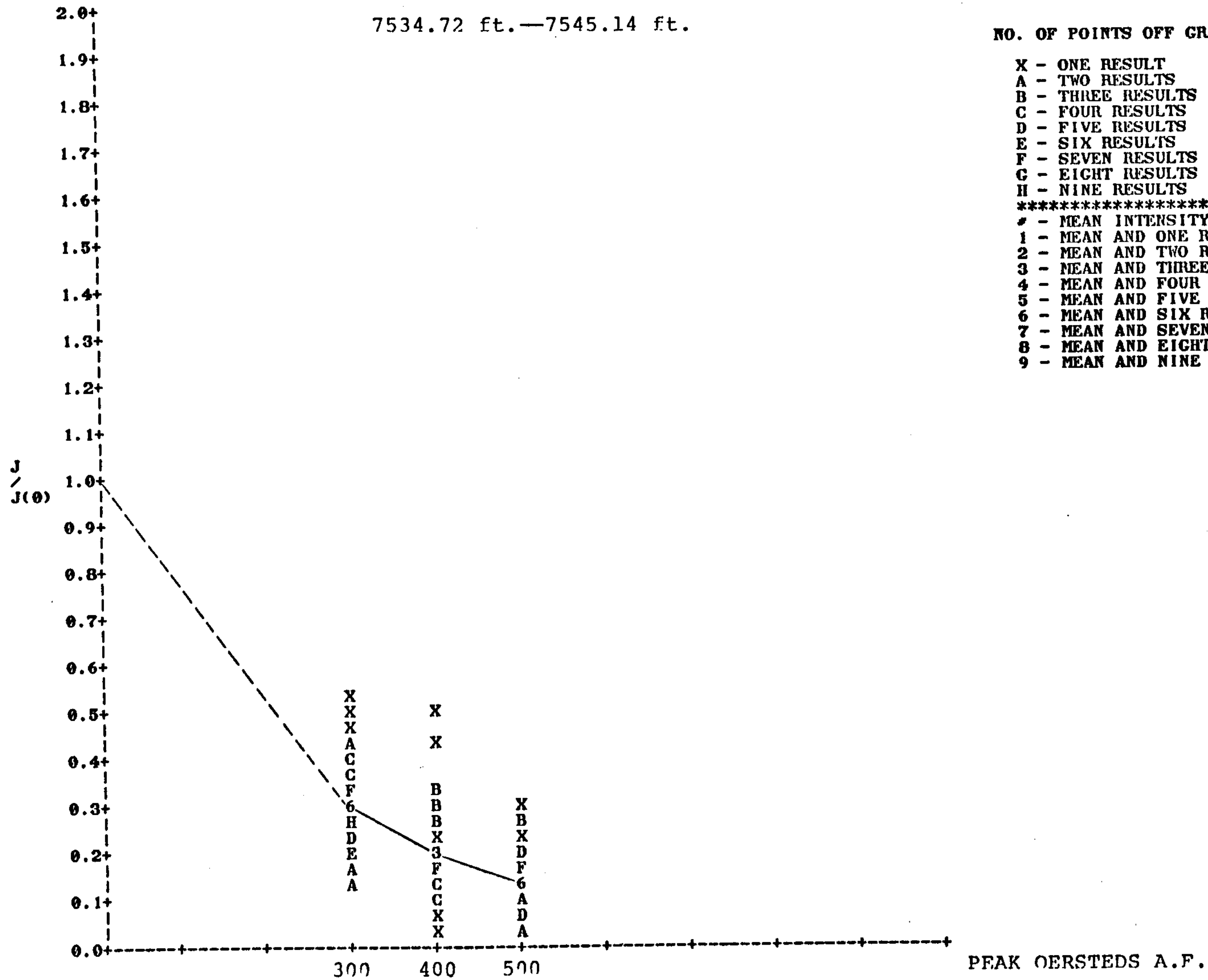
SAMPLE	NRM	300	400	500
MHLD11JC	54.1	56.0	35.1	12.0
MHLD12AA	70.0	56.9	57.6	34.7
MHLD12AB	70.2	61.6	25.9	13.2
MHLD12BA	70.7	51.4	52.5	29.9
MHLD12CA	66.1	67.5	60.4	-15.8
MHLD12CB	64.9	73.4	76.5	76.6
MHLD12DA	74.3	52.2	36.8	25.8
MHLD12DB	84.7	66.8	46.4	29.4
MHLD12EA	-78.8	-20.7	-11.5	-60.6
MHLD12EB	-78.4	-70.1	-71.9	-42.6
MHLD12FA	-84.5	-55.9	-25.0	-43.2
MHLD12GA	83.9	60.6	18.4	-12.3
MHLD12GB	69.5	44.2	41.7	23.6
MHLD12HA	81.6	57.1	23.8	85.3
MHLD13AA	72.8	57.1	47.1	48.7
MHLD13BA	70.9	87.9	63.3	38.3
MHLD13CA	46.0	73.3	19.2	6.1
MHLD13CB	50.4	34.9	-17.0	-13.7
MHLD13CC	68.6	73.5	46.4	28.5
MHLD13CD	79.3	-43.1	4.6	-18.1
MHLD13EA	75.5	70.8	58.1	28.2
MHLD13FA	64.0	33.8	20.3	12.7
MHLD13GA	42.3	31.4	24.7	3.4
MHLD13HA	26.5	21.1	10.9	0.5
MHLD13KA	20.2	22.8	16.4	9.8
MHLD13LA	75.0	35.0	27.5	9.8
MHLD13MA	79.4	50.6	14.8	25.2
MHLD13MB	79.0	58.1	32.0	17.5
MHLD14AA	49.6	25.1	0.9	0.9
MHLD14AB	57.8	30.5	14.3	0.0
MHLD14BA	63.5	41.9	27.3	16.1
MHLD14CA	56.0	9.6	1.0	0.0
MHLD14EA	65.9	43.9	37.6	19.1
MHLD14FA	55.6	57.6	29.1	16.5
MHLD14GA	71.9	49.6	46.5	35.6
MHLD14IA	54.8	36.3	5.8	-22.9
MHLD14JA	58.9	58.7	38.3	23.4
MHLD14JB	68.6	49.5	72.3	52.1
MHLD14JC	72.4	14.3	-2.4	-23.6
MHLD14KA	67.1	80.1	-8.1	-38.1
MHLD14KB	57.1	57.8	33.0	8.2
MHLD15AA	49.1	33.9	2.9	-11.9
MHLD15AB	42.8	66.5	26.3	-2.4
MHLD15BA	66.7	60.7	14.3	62.8
MHLD15BB	61.1	47.8	18.5	31.6
MHLD15BC	64.1	47.4	34.1	31.9
MHLD15BD	68.0	55.7	30.8	7.0
MHLD15BE	63.5	53.5	19.8	-0.0
MHLD15BF	83.1	63.1	54.3	75.4
MHLD15CA	65.7	75.2	35.1	16.3
MEAN	60.1	47.1	28.1	19.1
PALEOLAT.	41.0	28.3	14.9	9.8

CRYOGENIC MAGNETOMETER OUTPUT

SAMPLE	H=NRM X	H=NRM J	H=300 X	H=300 J	H=400 X	H=400 J	H=500 X	H=500 J	
MHLD15CB	-0.0282	0.285E-05	-0.0069	0.790E-06	-0.0015	0.433E-06	-0.0004	0.251E-06	
MHLD15CC	-0.0223	0.240E-05	-0.0083	0.104E-05	-0.0017	0.530E-06	-0.0012	0.356E-06	
MHLD15CD	-0.0246	0.295E-05	-0.0069	0.781E-06	-0.0022	0.424E-06	-0.0005	0.229E-06	
MHLD15CE	-0.0294	0.328E-05	-0.0084	0.886E-06	-0.0017	0.362E-06	-0.0007	0.225E-06	
MHLD15DA	0.0109	0.519E-05	0.0024	0.182E-05	0.0014	0.146E-05	0.0007	0.101E-05	?
MHLD16AA	-0.0159	0.181E-05	-0.0066	0.711E-06	-0.0015	0.338E-06	-0.0009	0.154E-06	
MHLD16BA	-0.0122	0.145E-05	-0.0036	0.560E-06	-0.0009	0.333E-06	-0.0003	0.235E-06	
MHLD16BB	-0.0219	0.222E-05	-0.0024	0.387E-06	0.0001	0.424E-06	-0.0005	0.192E-06	
MHLD16CA	-0.0080	0.908E-06	-0.0025	0.435E-06	-0.0009	0.276E-06	-0.0008	0.211E-06	
MHLD16CB	-0.0100	0.105E-05	-0.0018	0.305E-06	-0.0004	0.211E-06	0.0002	0.171E-06	
MHLD16CC	-0.0108	0.133E-05	-0.0029	0.429E-06	-0.0018	0.331E-06	-0.0003	0.206E-06	
MHLD16DA	-0.0136	0.157E-05	-0.0044	0.633E-06	-0.0009	0.372E-06	0.0001	0.250E-06	
MHLD16DB	-0.0156	0.159E-05	-0.0034	0.469E-06	-0.0013	0.303E-06	0.0001	0.175E-06	
MHLD16DC	-0.0215	0.223E-05	-0.0030	0.420E-06	-0.0031	0.371E-06	-0.0025	0.266E-06	
MHLD16EA	-0.0137	0.218E-05	-0.0026	0.548E-06	-0.0018	0.355E-06	-0.0023	0.333E-06	
MHLD16EB	-0.0248	0.254E-05	-0.0069	0.855E-06	-0.0012	0.520E-06	-0.0008	0.404E-06	
MHLD16FA	-0.0174	0.180E-05	-0.0056	0.660E-06	-0.0009	0.325E-06	0.0000	0.166E-06	
MHLD16FB	-0.0188	0.394E-05	-0.0037	0.110E-05	-0.0009	0.613E-06	-0.0006	0.419E-06	
MHLD16FC	-0.0204	0.206E-05	-0.0039	0.560E-06	0.0	0.297E-06	0.0015	0.157E-06	
MHLD17AA	-0.0204	0.217E-05	-0.0034	0.499E-06	-0.0014	0.418E-06	-0.0011	0.227E-06	
MHLD17AB	-0.0194	0.202E-05	-0.0035	0.492E-06	-0.0023	0.391E-06	0.0	0.306E-06	
MHLD17BA	-0.0155	0.344E-05	-0.0022	0.107E-05	-0.0005	0.808E-06	0.0001	0.644E-06	
MHLD17CA	-0.0219	0.233E-05	-0.0029	0.432E-06	-0.0008	0.247E-06	-0.0001	0.147E-06	
MHLD17CB	-0.0233	0.361E-05	0.0001	0.568E-06	-0.0008	0.563E-06	0.0007	0.316E-06	
MHLD17DA	-0.0223	0.247E-05	-0.0010	0.834E-06	-0.0003	0.743E-06	0.0011	0.673E-06	
MHLD17DB	-0.0240	0.261E-05	-0.0018	0.859E-06	-0.0011	0.620E-06	-0.0023	0.543E-06	
MHLD17DC	-0.0154	0.271E-05	-0.0033	0.681E-06	-0.0031	0.509E-06	-0.0016	0.274E-06	
MHLD17DD	-0.0320	0.342E-05	-0.0063	0.885E-06	-0.0027	0.442E-06	-0.0007	0.103E-06	
MHLD17DE	-0.0250	0.311E-05	-0.0016	0.815E-06	-0.0002	0.624E-06	-0.0005	0.540E-06	
MHLD17DF	-0.0198	0.226E-05	-0.0027	0.648E-06	-0.0013	0.523E-06	0.0001	0.326E-06	
MHLD17EA	-0.0173	0.290E-05	-0.0025	0.534E-06	-0.0014	0.480E-06	-0.0002	0.242E-06	
MHLD17EB	-0.0194	0.208E-05	-0.0034	0.762E-06	-0.0030	0.566E-06	0.0005	0.395E-06	
MHLD17EC	-0.0176	0.199E-05	-0.0078	0.101E-05	-0.0058	0.644E-06	-0.0021	0.495E-06	
MHLD17FA	-0.0204	0.253E-05	-0.0045	0.504E-06	-0.0010	0.109E-06	0.0033	0.622E-06	
MHLD18AA	-0.0130	0.133E-05	-0.0027	0.445E-06	-0.0012	0.326E-06	-0.0005	0.237E-06	
MHLD18BA	-0.0077	0.802E-06	-0.0005	0.337E-06	0.0003	0.386E-06	0.0001	0.162E-06	
MHLD18CA	-0.0066	0.706E-06	-0.0012	0.329E-06	-0.0007	0.310E-06	-0.0005	0.200E-06	
MHLD18CB	0.0181	0.188E-05	0.0022	0.217E-06	0.0011	0.115E-06	0.0005	0.680E-07	
MHLD18DA	-0.0271	0.301E-05	-0.0046	0.583E-06	-0.0028	0.640E-06	-0.0010	0.389E-06	
MHLD18DB	-0.0163	0.182E-05	-0.0030	0.345E-06	-0.0010	0.318E-06	0.0002	0.257E-06	
MHLD18EA	-0.0086	0.911E-06	-0.0015	0.295E-06	-0.0001	0.301E-06	-0.0005	0.154E-06	
MHLD18FA	0.0073	0.811E-06	0.0005	0.315E-06	0.0007	0.276E-06	0.0011	0.121E-06	?
MHLD18GA	-0.0087	0.898E-06	-0.0018	0.324E-06	-0.0011	0.197E-06	-0.0002	0.159E-06	
MHLD18GB	-0.0140	0.141E-05	-0.0023	0.419E-06	-0.0012	0.192E-06	-0.0001	0.226E-06	
MHLD18HA	0.0172	0.239E-05	0.0023	0.310E-06	0.0015	0.267E-06	0.0004	0.119E-06	
MHLD19AA	-0.0183	0.262E-05	-0.0015	0.604E-06	-0.0004	0.496E-06	0.0005	0.372E-06	?
MHLD19AB	-0.0107	0.118E-05	-0.0009	0.402E-06	-0.0010	0.311E-06	0.0001	0.210E-06	
MHLD19AC	-0.0091	0.143E-05	-0.0018	0.427E-06	-0.0013	0.351E-06	-0.0003	0.244E-06	
MHLD19BA	-0.0096	0.127E-05	-0.0006	0.273E-06	-0.0003	0.114E-06	0.0005	0.164E-06	
MHLD19BB	-0.0228	0.235E-05	-0.0041	0.529E-06	-0.0039	0.501E-06	-0.0011	0.252E-06	

*** DEMAGNETIZATION GRAPH ***

7534.72 ft.—7545.14 ft.



NO. OF POINTS OFF GRAPH = 2

X - ONE RESULT
A - TWO RESULTS
B - THREE RESULTS
C - FOUR RESULTS
D - FIVE RESULTS
E - SIX RESULTS
F - SEVEN RESULTS
G - EIGHT RESULTS
H - NINE RESULTS
****
- MEAN INTENSITY
1 - MEAN AND ONE RESULT
2 - MEAN AND TWO RESULTS
3 - MEAN AND THREE RESULTS
4 - MEAN AND FOUR RESULTS
5 - MEAN AND FIVE RESULTS
6 - MEAN AND SIX RESULTS
7 - MEAN AND SEVEN RESULTS
8 - MEAN AND EIGHT RESULTS
9 - MEAN AND NINE RESULTS

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* BRIDEN STABILITY INDEX *
****

Based on total magnetization (J).

SAMPLE	NRM-300	300-400	400-500
MHLD15CB	0.28	0.55	0.58
MHLD15CC	0.44	0.51	0.67
MHLD15CD	0.26	0.54	0.54
MHLD15CE	0.27	0.41	0.62
MHLD15DA	0.35	0.80	0.69
MHLD16AA	0.39	0.48	0.46
MHLD16BA	0.39	0.60	0.70
MHLD16BB	0.17	0.90	0.45
MHLD16CA	0.48	0.63	0.76
MHLD16CB	0.29	0.69	0.81
MHLD16CC	0.32	0.77	0.62
MHLD16DA	0.40	0.59	0.67
MHLD16DB	0.29	0.65	0.58
MHLD16DC	0.19	0.88	0.72
MHLD16EA	0.25	0.65	0.94
MHLD16EB	0.34	0.61	0.78
MHLD16FA	0.37	0.49	0.51
MHLD16FB	0.28	0.56	0.68
MHLD16FC	0.27	0.53	0.53
MHLD17AA	0.23	0.84	0.54
MHLD17AB	0.24	0.79	0.78
MHLD17BA	0.31	0.76	0.80
MHLD17CA	0.19	0.57	0.60
MHLD17CB	0.16	0.99	0.56
MHLD17DA	0.34	0.89	0.91
MHLD17DB	0.33	0.72	0.88
MHLD17DC	0.25	0.75	0.54
MHLD17DD	0.26	0.50	0.23
MHLD17DE	0.26	0.77	0.86
MHLD17DF	0.29	0.81	0.62
MHLD17EA	0.18	0.90	0.50
MHLD17EB	0.37	0.74	0.70
MHLD17EC	0.51	0.64	0.77
MHLD17FA	0.20	0.22	-3.72
MHLD18AA	0.33	0.73	0.73
MHLD18BA	0.42	0.85	0.42
MHLD18CA	0.47	0.94	0.65
MHLD18CB	0.12	0.53	0.59
MHLD18DA	0.19	0.90	0.61
MHLD18DB	0.19	0.92	0.81
MHLD18EA	0.32	0.98	0.51
MHLD18FA	0.39	0.88	0.44
MHLD18GA	0.36	0.61	0.81
MHLD18CB	0.30	0.46	0.82
MHLD18HA	0.13	0.86	0.45
MHLD19AA	0.23	0.82	0.75
MHLD19AB	0.34	0.78	0.68
MHLD19AC	0.30	0.82	0.69
MHLD19BA	0.22	0.42	0.57
MHLD19BB	0.23	0.95	0.50
MEAN	0.29	0.70	0.56

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* BRIDEN STABILITY INDEX *
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Based on vertical component only (X).

SAMPLE	NRM-300	300-400	400-500
MHLD15CB	0.25	0.22	0.30
MHLD15CC	0.37	0.20	0.74
MHLD15CD	0.28	0.32	0.23
MHLD15CE	0.29	0.20	0.41
MHLD15DA	0.22	0.56	0.52
MHLD16AA	0.41	0.23	0.58
MHLD16BA	0.30	0.25	0.28
MHLD16BB	0.11	-0.04	-5.00
MHLD16CA	0.32	0.35	0.89
MHLD16CB	0.18	0.22	-0.50
MHLD16CC	0.27	0.63	0.16
MHLD16DA	0.32	0.20	-0.06
MHLD16DB	0.22	0.38	-0.08
MHLD16DC	0.14	0.98	0.81
MHLD16EA	0.19	0.71	0.72
MHLD16EB	0.28	0.17	0.67
MHLD16FA	0.32	0.17	-0.05
MHLD16FB	0.20	0.24	0.67
MHLD16FC	0.19	0.0	0.0
MHLD17AA	0.17	0.39	0.78
MHLD17AB	0.18	0.65	0.0
MHLD17BA	0.15	0.22	-0.20
MHLD17CA	0.13	0.28	0.12
MHLD17CB	-0.01	-5.33	-0.94
MHLD17DA	0.05	0.29	-3.83
MHLD17DB	0.08	0.62	0.0
MHLD17DC	0.21	0.97	0.51
MHLD17DD	0.20	0.43	0.28
MHLD17DE	0.07	0.15	-0.20
MHLD17DF	0.14	0.47	-0.04
MHLD17EA	0.14	0.57	0.14
MHLD17EB	0.17	0.90	-0.17
MHLD17EC	0.44	0.75	0.37
MHLD17FA	0.22	0.22	-3.25
MHLD18AA	0.21	0.44	0.46
MHLD18BA	0.07	-0.55	0.33
MHLD18CA	0.19	0.56	0.79
MHLD18CB	0.12	0.49	0.52
MHLD18DA	0.17	0.60	0.38
MHLD18DB	0.18	0.36	-0.14
MHLD18EA	0.18	0.06	-3.00
MHLD18FA	0.07	0.73	0.50
MHLD18GA	0.21	0.59	0.18
MHLD18GB	0.16	0.52	0.12
MHLD18HA	0.13	0.65	0.30
MHLD19AA	0.08	0.30	-1.11
MHLD19AB	0.08	0.89	-0.05
MHLD19AC	0.20	0.72	0.19
MHLD19BA	0.06	0.50	-1.83
MHLD19BB	0.18	0.94	0.29
MEAN	0.19	0.31	-0.15

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* INCLINATION AND PALEOLATITUDE *
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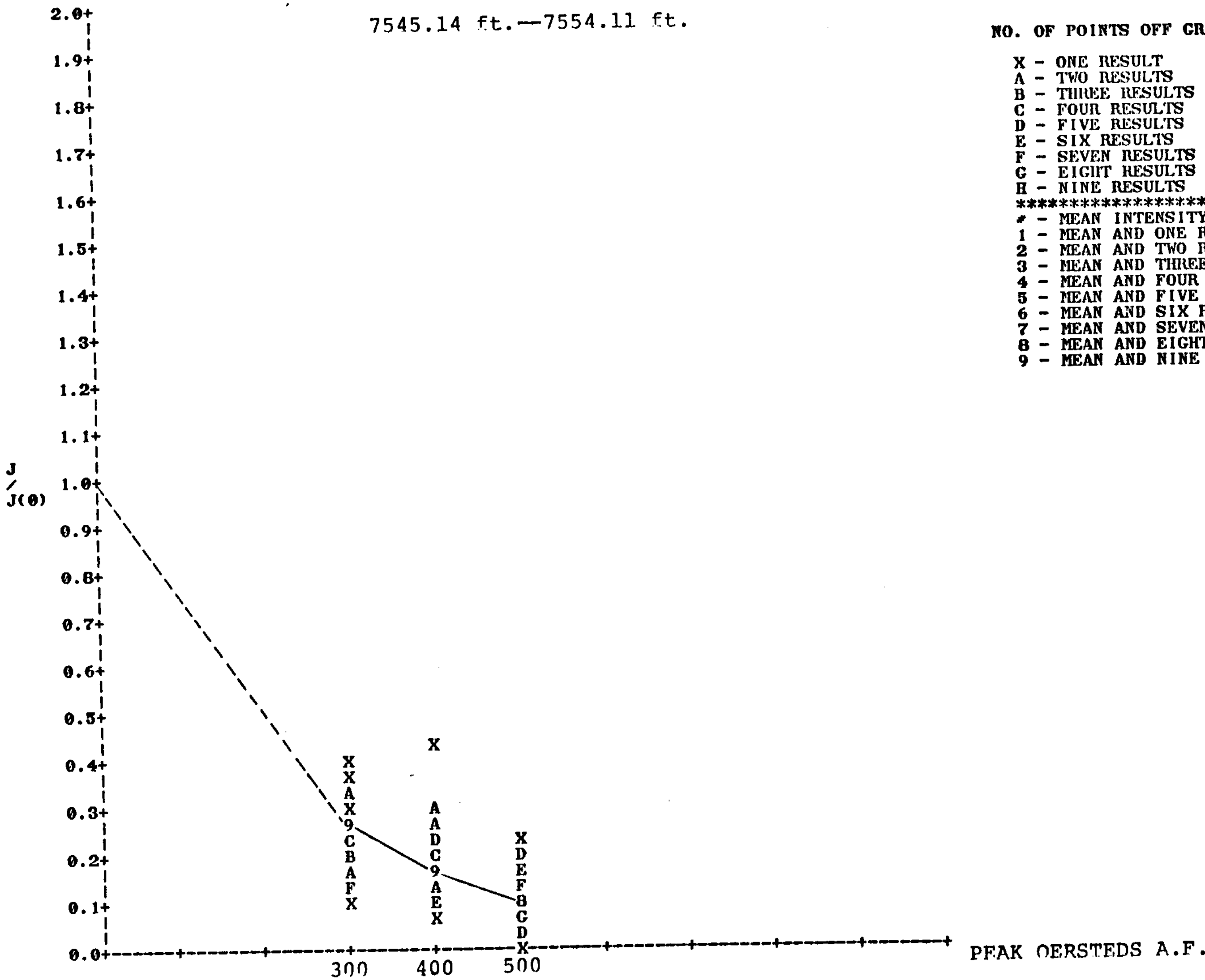
SAMPLE	NRM	300	400	500
MHLD15CB	82.3	61.6	20.3	10.3
MHLD15CC	68.5	53.1	18.7	20.6
MHLD15CD	56.4	62.0	31.2	12.6
MHLD15CE	63.9	71.5	28.0	18.1
MHLD15DA	-12.1	-7.6	-5.3	-4.0
MHLD16AA	61.6	68.1	27.3	35.7
MHLD16BA	57.6	40.0	15.7	6.1
MHLD16BB	81.1	38.3	-1.4	15.1
MHLD16CA	61.8	35.9	19.0	22.3
MHLD16CB	73.0	36.1	10.9	-6.7
MHLD16CC	54.6	43.5	33.9	8.4
MHLD16DA	59.9	44.1	14.0	-1.1
MHLD16DB	80.0	46.5	25.4	-3.3
MHLD16DC	74.3	46.6	56.8	70.2
MHLD16EA	38.9	27.7	30.4	43.8
MHLD16EB	77.4	54.4	13.3	11.4
MHLD16FA	75.5	58.9	17.0	-1.7
MHLD16FB	28.5	20.0	8.4	8.2
MHLD16FC	82.2	44.9	0.0	-67.2
MHLD17AA	70.3	43.7	18.8	27.6
MHLD17AB	74.1	46.2	36.1	0.0
MHLD17BA	26.7	12.2	3.5	-0.9
MHLD17CA	70.4	41.2	18.9	3.9
MHLD17CB	40.3	-1.5	8.2	-13.7
MHLD17DA	64.9	7.2	2.3	-9.8
MHLD17DB	67.2	12.4	10.7	25.1
MHLD17DC	34.6	28.5	38.2	35.7
MHLD17DD	69.4	45.4	37.6	46.7
MHLD17DE	53.6	11.7	2.3	5.8
MHLD17DF	61.5	25.1	14.4	-0.9
MHLD17EA	36.8	27.3	17.0	4.7
MHLD17EB	69.5	26.1	32.0	-7.3
MHLD17EC	62.0	50.3	65.3	25.8
MHLD17FA	53.9	63.2	66.9	-31.5
MHLD18AA	77.3	38.1	21.6	13.4
MHLD18BA	75.1	9.4	-4.5	-3.5
MHLD18CA	69.3	22.3	13.0	16.0
MHLD18CB	-75.2	-81.6	-66.3	-54.0
MHLD18DA	64.3	52.8	26.0	15.6
MHLD18DB	63.8	58.7	19.3	-3.3
MHLD18EA	71.6	31.7	1.9	18.9
MHLD18FA	-65.0	-10.1	-14.7	-60.1
MHLD18GA	75.8	34.8	33.8	7.2
MHLD18GB	81.1	33.3	38.6	3.8
MHLD18HA	-46.3	-48.0	-34.1	-22.1
MHLD19AA	44.3	14.4	5.2	-7.7
MHLD19AB	64.6	12.9	18.7	-1.4
MHLD19AC	39.5	25.0	21.7	5.9
MHLD19BA	49.3	12.7	15.2	-19.6
MHLD19BB	76.1	50.9	50.3	25.9
MEAN	57.7	33.8	20.2	11.3
PALEOLAT.	38.3	18.5	10.4	5.7

CRYOGENIC MAGNETOMETER OUTPUT

SAMPLE	H=NRM X	H=NRM J	H=300 X	H=300 J	H=400 X	H=400 J	H=500 X	H=500 J
MHLD19BC	-0.0125	0.146E-05	-0.0025	0.480E-06	-0.0013	0.369E-06	-0.0001	0.236E-06
MHLD19CA	-0.0173	0.177E-05	-0.0030	0.473E-06	-0.0020	0.352E-06	-0.0012	0.260E-06
MHLD19DA	-0.0169	0.186E-05	-0.0039	0.442E-06	-0.0029	0.357E-06	-0.0016	0.174E-06
MHLD19EA	-0.0275	0.323E-05	-0.0068	0.122E-05	-0.0111	0.138E-05	-0.0069	0.790E-06
MHLD19EB	-0.0155	0.167E-05	-0.0022	0.422E-06	-0.0015	0.313E-06	-0.0002	0.263E-06
MHLD19EC	-0.0110	0.117E-05	-0.0017	0.303E-06	-0.0010	0.256E-06	-0.0001	0.171E-06
MHLD19ED	-0.0139	0.145E-05	-0.0020	0.389E-06	-0.0008	0.297E-06	-0.0005	0.249E-06
MHLD19FA	-0.0159	0.164E-05	-0.0022	0.308E-06	-0.0012	0.197E-06	-0.0000	0.216E-06
MHLD19FB	-0.0123	0.131E-05	0.0002	0.299E-05	-0.0010	0.176E-06	-0.0003	0.239E-06
MHLD19GA	-0.0171	0.175E-05	-0.0022	0.241E-06	-0.0023	0.238E-06	-0.0005	0.218E-06
MHLD20AA	-0.0134	0.166E-05	-0.0018	0.367E-06	-0.0008	0.312E-06	-0.0008	0.176E-06
MHLD20AB	-0.0145	0.170E-05	-0.0005	0.211E-06	-0.0001	0.203E-06	0.0007	0.131E-06
MHLD20AC	-0.0113	0.138E-05	-0.0016	0.177E-06	-0.0012	0.160E-06	-0.0008	0.901E-07
MHLD20AD	-0.0106	0.129E-05	-0.0017	0.212E-06	0.0004	0.176E-06	-0.0003	0.585E-07
MHLD20BA	-0.0229	0.234E-05	-0.0053	0.613E-06	-0.0036	0.540E-06	-0.0036	0.437E-06
MHLD20BB	-0.0079	0.792E-06	-0.0011	0.205E-06	0.0001	0.238E-06	-0.0002	0.723E-07
MHLD20BC	-0.0107	0.132E-05	-0.0001	0.195E-06	-0.0003	0.287E-06	0.0004	0.424E-07
MHLD20CA	-0.0107	0.131E-05	-0.0029	0.344E-06	-0.0016	0.260E-06	-0.0010	0.261E-06
MHLD20CB	-0.0125	0.156E-05	-0.0016	0.327E-06	-0.0009	0.180E-06	-0.0001	0.155E-06
MHLD20DA	-0.0091	0.949E-06	-0.0010	0.191E-06	-0.0004	0.183E-06	0.0001	0.131E-06
MHLD20DB	-0.0102	0.103E-05	-0.0007	0.314E-06	-0.0013	0.195E-06	-0.0013	0.203E-06
MHLD20EA	0.0136	0.138E-05	0.0017	0.227E-06	0.0023	0.305E-06	0.0017	0.188E-06
MHLD20EB	0.0110	0.111E-05	0.0014	0.257E-06	0.0005	0.602E-07	0.0007	0.763E-07 ?
MHLD20EC	0.0086	0.876E-06	0.0007	0.180E-06	0.0005	0.162E-06	0.0007	0.704E-07
MHLD20FA	-0.0137	0.153E-05	-0.0022	0.248E-06	-0.0011	0.188E-06	-0.0010	0.128E-06
MHLD20FB	-0.0121	0.154E-05	-0.0011	0.199E-06	-0.0003	0.222E-06	0.0001	0.308E-07
MHLD21AA	-0.0276	0.295E-05	-0.0031	0.340E-06	-0.0031	0.508E-06	-0.0018	0.254E-06
MHLD21AB	-0.0329	0.354E-05	-0.0049	0.491E-06	-0.0022	0.328E-06	-0.0008	0.990E-07
MHLD21AC	-0.0418	0.435E-05	-0.0034	0.480E-06	-0.0021	0.418E-06	-0.0006	0.311E-06
MHLD21BA	-0.0204	0.228E-05	-0.0014	0.717E-06	-0.0008	0.680E-06	0.0007	0.430E-06
MHLD21BB	-0.0435	0.470E-05	-0.0061	0.756E-06	-0.0038	0.517E-06	-0.0023	0.357E-06
MHLD21CA	-0.0253	0.337E-05	-0.0042	0.700E-06	-0.0021	0.394E-06	-0.0022	0.284E-06
MHLD21CB	-0.0173	0.174E-05	-0.0031	0.602E-06	-0.0021	0.451E-06	-0.0020	0.269E-06
MHLD21DA	-0.0128	0.157E-05	-0.0014	0.182E-06	-0.0005	0.168E-06	0.0001	0.255E-07
MHLD21EA	-0.0429	0.527E-05	-0.0060	0.865E-06	-0.0007	0.498E-06	-0.0016	0.234E-06
MHLD21EB	-0.0154	0.192E-05	-0.0016	0.343E-06	-0.0012	0.166E-06	-0.0012	0.126E-06
MHLD21EC	-0.0116	0.195E-05	-0.0017	0.498E-06	-0.0006	0.385E-06	-0.0003	0.223E-06
MHLD21FA	-0.0220	0.226E-05	-0.0012	0.454E-06	0.0003	0.341E-06	0.0006	0.237E-06
MHLD21GA	-0.0087	0.872E-06	-0.0014	0.236E-06	-0.0008	0.180E-06	-0.0005	0.106E-06
MHLD21IA	-0.0131	0.190E-05	-0.0025	0.336E-06	-0.0008	0.308E-06	-0.0005	0.119E-06
MHLD21JA	-0.0121	0.127E-05	-0.0025	0.257E-06	-0.0009	0.217E-06	-0.0003	0.114E-06
MHLD21JB	-0.0150	0.165E-05	-0.0026	0.380E-06	-0.0014	0.321E-06	-0.0004	0.180E-06
MHLD22AA	-0.0149	0.195E-05	-0.0019	0.366E-06	-0.0008	0.314E-06	0.0004	0.303E-06
MHLD22AB	-0.0172	0.219E-05	-0.0024	0.412E-06	-0.0014	0.343E-06	-0.0006	0.239E-06
MHLD22BA	-0.0213	0.247E-05	-0.0036	0.381E-06	-0.0031	0.371E-06	-0.0008	0.218E-06
MHLD22BB	-0.0210	0.218E-05	-0.0027	0.360E-06	-0.0018	0.481E-06	-0.0012	0.188E-06
MHLD22BC	-0.0211	0.224E-05	-0.0030	0.411E-06	-0.0009	0.412E-06	-0.0003	0.361E-06
MHLD22CA	-0.0203	0.262E-05	-0.0026	0.516E-06	-0.0018	0.439E-06	-0.0015	0.268E-06
MHLD22CB	-0.0184	0.261E-05	-0.0049	0.534E-06	-0.0034	0.397E-06	-0.0025	0.286E-06
MHLD22CC	-0.0194	0.265E-05	-0.0027	0.451E-06	-0.0014	0.341E-06	-0.0007	0.224E-06

*** DEMAGNETIZATION GRAPH ***

7545.14 ft.—7554.11 ft.



NO. OF POINTS OFF GRAPH = 3

X - ONE RESULT
A - TWO RESULTS
B - THREE RESULTS
C - FOUR RESULTS
D - FIVE RESULTS
E - SIX RESULTS
F - SEVEN RESULTS
G - EIGHT RESULTS
H - NINE RESULTS
****
- MEAN INTENSITY
1 - MEAN AND ONE RESULT
2 - MEAN AND TWO RESULTS
3 - MEAN AND THREE RESULTS
4 - MEAN AND FOUR RESULTS
5 - MEAN AND FIVE RESULTS
6 - MEAN AND SIX RESULTS
7 - MEAN AND SEVEN RESULTS
8 - MEAN AND EIGHT RESULTS
9 - MEAN AND NINE RESULTS

****
* BRIDEN STABILITY INDEX *
****

Based on total magnetization (J).

SAMPLE	NRM-300	300-400	400-500
MHLD19BC	0.33	0.77	0.64
MHLD19CA	0.27	0.74	0.74
MHLD19DA	0.24	0.81	0.49
MHLD19EA	0.38	0.87	0.57
MHLD19EB	0.25	0.74	0.84
MHLD19EC	0.26	0.84	0.67
MHLD19ED	0.27	0.76	0.84
MHLD19FA	0.19	0.64	0.90
MHLD19FB	-0.28	0.06	0.64
MHLD19CA	0.14	0.99	0.92
MHLD20AA	0.22	0.85	0.56
MHLD20AB	0.12	0.96	0.65
MHLD20AC	0.13	0.90	0.56
MHLD20AD	0.16	0.83	0.33
MHLD20BA	0.26	0.88	0.81
MHLD20BB	0.26	0.84	0.30
MHLD20BC	0.15	0.53	0.15
MHLD20CA	0.26	0.75	1.00
MHLD20CB	0.21	0.55	0.86
MHLD20DA	0.20	0.96	0.72
MHLD20DB	0.31	0.62	0.96
MHLD20EA	0.17	0.66	0.62
MHLD20EB	0.23	0.23	0.73
MHLD20EC	0.21	0.90	0.44
MHLD20FA	0.16	0.76	0.68
MHLD20FB	0.13	0.89	0.14
MHLD21AA	0.12	0.51	0.50
MHLD21AB	0.14	0.67	0.30
MHLD21AC	0.11	0.87	0.74
MHLD21BA	0.31	0.95	0.63
MHLD21BB	0.16	0.68	0.69
MHLD21CA	0.21	0.56	0.72
MHLD21CB	0.35	0.75	0.60
MHLD21DA	0.12	0.92	0.15
MHLD21EA	0.16	0.58	0.47
MHLD21EB	0.18	0.48	0.76
MHLD21EC	0.26	0.77	0.58
MHLD21FA	0.20	0.75	0.69
MHLD21GA	0.27	0.76	0.59
MHLD21IA	0.18	0.92	0.38
MHLD21JA	0.20	0.85	0.53
MHLD21JB	0.23	0.84	0.56
MHLD22AA	0.19	0.86	0.96
MHLD22AB	0.19	0.83	0.70
MHLD22BA	0.15	0.97	0.59
MHLD22BB	0.16	0.66	0.39
MHLD22BC	0.18	1.00	0.88
MHLD22CA	0.20	0.85	0.61
MHLD22CB	0.20	0.74	0.72
MHLD22CC	0.17	0.76	0.66
MEAN	0.20	0.76	0.62

****
* BRIDEN STABILITY INDEX *
****

Based on vertical component only (X).

SAMPLE	NRM-300	300-400	400-500
MHLD19BC	0.20	0.52	0.08
MHLD19CA	0.17	0.67	0.60
MHLD19DA	0.23	0.74	0.55
MHLD19EA	0.25	0.38	0.62
MHLD19EB	0.14	0.70	0.16
MHLD19EC	0.15	0.56	0.16
MHLD19ED	0.14	0.43	0.59
MHLD19FA	0.14	0.56	0.04
MHLD19FB	-0.02	-3.80	0.26
MHLD19GA	0.13	1.00	0.24
MHLD20AA	0.13	0.47	0.94
MHLD20AB	0.04	0.27	-4.67
MHLD20AC	0.15	0.76	0.68
MHLD20AD	0.16	-0.24	-0.75
MHLD20BA	0.23	0.67	0.97
MHLD20BB	0.15	-0.09	-2.00
MHLD20BC	0.01	-0.33	-1.14
MHLD20CA	0.27	0.57	0.61
MHLD20CB	0.13	0.56	0.17
MHLD20DA	0.11	0.35	-0.43
MHLD20DB	0.07	0.27	1.00
MHLD20EA	0.13	0.69	0.74
MHLD20EB	0.13	0.34	0.60
MHLD20EC	0.08	0.79	0.73
MHLD20FA	0.16	0.51	0.87
MHLD20FB	0.09	0.26	-0.50
MHLD21AA	0.11	1.00	0.58
MHLD21AB	0.15	0.45	0.36
MHLD21AC	0.08	0.62	0.29
MHLD21BA	0.07	0.57	-0.87
MHLD21BB	0.14	0.62	0.61
MHLD21CA	0.17	0.50	0.98
MHLD21CB	0.18	0.66	0.98
MHLD21DA	0.11	0.39	-0.09
MHLD21EA	0.14	0.12	-0.29
MHLD21EB	0.10	0.75	1.00
MHLD21EC	0.15	0.34	0.42
MHLD21FA	0.05	-0.26	0.00
MHLD21GA	0.17	0.55	0.69
MHLD21IA	0.19	0.35	0.59
MHLD21JA	0.21	0.37	0.32
MHLD21JB	0.17	0.55	0.29
MHLD22AA	0.13	0.41	-0.50
MHLD22AB	0.14	0.58	0.43
MHLD22BA	0.17	0.86	0.27
MHLD22BB	0.13	0.65	0.67
MHLD22BC	0.14	0.32	0.26
MHLD22CA	0.13	0.69	0.81
MHLD22CB	0.26	0.70	0.74
MHLD22CC	0.14	0.51	0.52
MEAN	0.14	0.40	0.20

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* INCLINATION AND PALEOLATITUDE *
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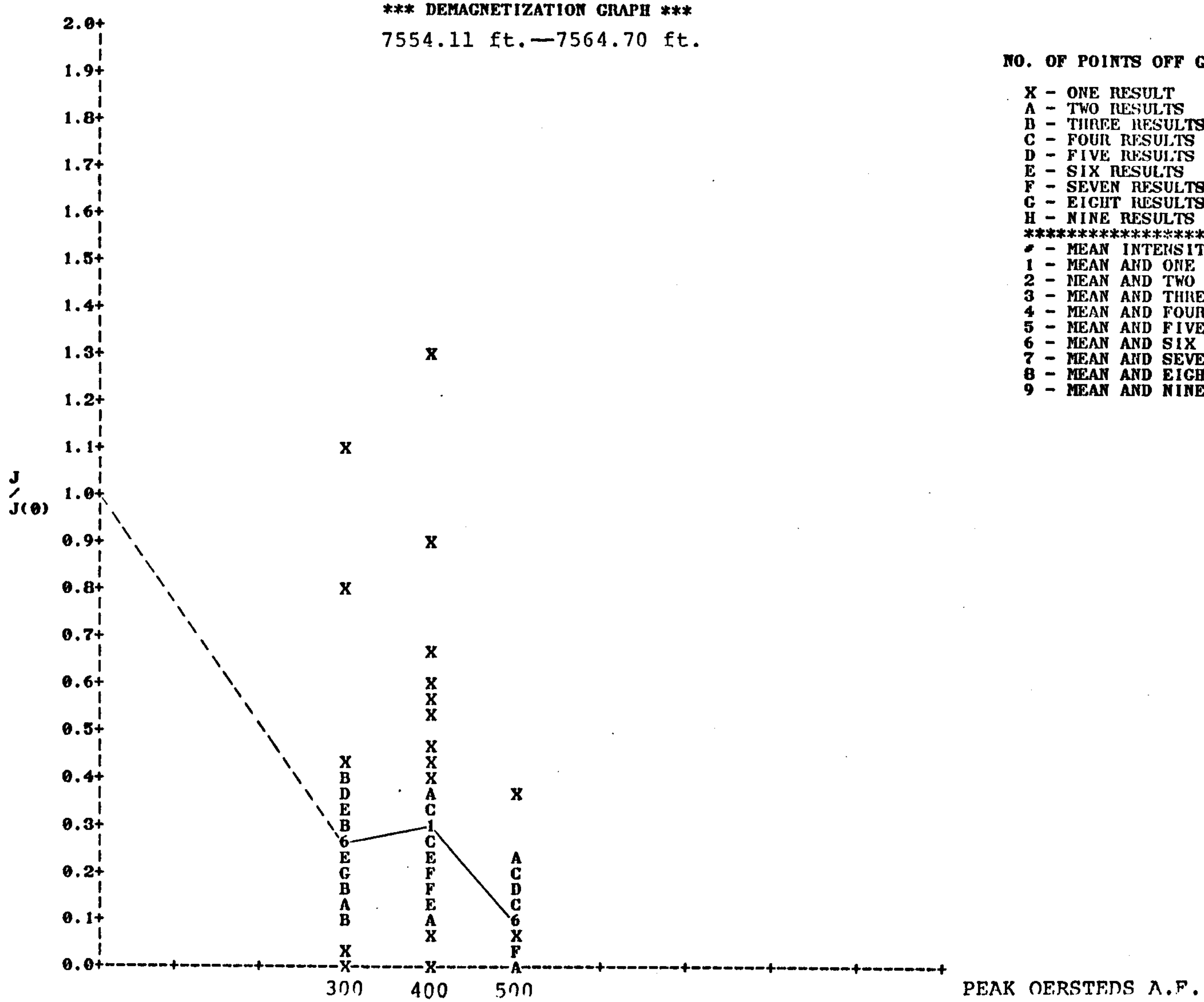
SAMPLE	NRM	300	400	500
MHLD19BC	59.0	31.4	20.6	2.4
MHLD19CA	78.5	39.3	34.7	27.5
MHLD19DA	65.8	61.9	54.2	67.0
MHLD19EA	58.4	34.1	53.4	60.8
MHLD19EB	68.1	31.4	29.7	5.5
MHLD19EC	69.6	34.1	21.8	5.0
MHLD19ED	73.5	30.9	16.7	11.6
MHLD19FA	75.2	44.3	37.6	1.3
MHLD19FB	69.6	-0.5	32.7	6.0
MHLD19GA	77.9	69.2	71.0	14.6
MHLD20AA	54.0	29.4	15.8	27.1
MHLD20AB	58.9	15.1	4.2	-32.2
MHLD20AC	55.1	68.5	51.6	70.6
MHLD20AD	55.5	53.4	-13.1	30.8
MHLD20BA	78.6	59.8	41.1	56.7
MHLD20BB	86.1	34.1	-2.4	16.1
MHLD20BC	54.7	4.4	7.0	-70.5
MHLD20CA	54.8	57.4	39.4	22.5
MHLD20CB	53.3	29.2	29.9	5.6
MHLD20DA	73.6	31.5	11.0	-6.6
MHLD20DB	88.2	13.8	41.9	39.9
MHLD20EA	-80.9	-50.3	-49.0	-64.6
MHLD20EB	-84.0	-34.3	-56.1	-66.5
MHLD20EC	-78.9	-22.9	-19.9	-84.2
MHLD20FA	62.9	65.0	37.8	51.1
MHLD20FB	51.9	35.2	7.8	-29.1
MHLD21AA	69.4	65.6	37.6	45.2
MHLD21AB	68.4	87.1	42.1	53.9
MHLD21AC	73.9	45.1	30.1	11.1
MHLD21BA	63.8	11.3	6.8	-9.4
MHLD21BB	67.9	53.8	47.3	40.1
MHLD21CA	48.7	36.9	32.2	49.2
MHLD21CB	82.8	31.0	27.0	47.9
MHLD21DA	54.7	50.2	19.1	-11.3
MHLD21EA	54.5	43.5	8.1	43.2
MHLD21EB	53.2	27.8	46.5	72.0
MHLD21EC	36.7	20.6	9.0	6.4
MHLD21FA	76.5	14.7	-5.0	-14.7
MHLD21GA	86.3	38.0	26.4	31.4
MHLD21IA	43.8	46.8	16.0	24.9
MHLD21JA	72.4	83.2	25.9	15.2
MHLD21JB	66.2	42.1	25.9	12.9
MHLD22AA	49.7	32.2	14.7	-7.6
MHLD22AB	51.8	35.6	24.1	14.5
MHLD22BA	59.9	73.2	58.2	23.0
MHLD22BB	74.3	49.9	22.0	39.6
MHLD22BC	70.3	45.8	13.3	4.0
MHLD22CA	50.9	30.3	24.2	32.7
MHLD22CB	44.7	65.2	58.9	60.9
MHLD22CC	47.3	36.0	23.3	18.2
MEAN	59.8	38.8	26.0	23.4
PALEOLAT.	40.7	21.9	13.7	12.2

CRYOGENIC MAGNETOMETER OUTPUT

SAMPLE	H=NRM X	H=NRM J	H=300 X	H=300 J	H=400 X	H=400 J	H=500 X	H=500 J
MHLD22DA	-0.0225	0.294E-05	-0.0021	0.422E-06	-0.0014	0.424E-06	-0.0004	0.105E-06
MHLD22DB	-0.0142	0.149E-05	-0.0023	0.398E-06	-0.0009	0.315E-06	0.0	0.153E-06
MHLD22FA	-0.0056	0.680E-06	-0.0010	0.169E-06	-0.0007	0.217E-06	-0.0006	0.112E-06
MHLD22FB	-0.0061	0.655E-06	-0.0011	0.228E-06	-0.0008	0.215E-06	-0.0004	0.604E-07
MHLD22GA	-0.0055	0.612E-06	-0.0016	0.246E-06	0.0001	0.175E-06	-0.0006	0.890E-07
MHLD22GB	-0.0078	0.889E-06	-0.0006	0.169E-06	-0.0002	0.201E-06	-0.0003	0.838E-07
MHLD22HA	-0.0091	0.117E-05	-0.0014	0.313E-06	-0.0010	0.312E-06	-0.0006	0.778E-07
MHLD23AA	-0.0072	0.746E-06	-0.0009	0.247E-06	-0.0001	0.296E-06	0.0001	0.150E-07
MHLD23CA	-0.0149	0.178E-05	-0.0007	0.267E-06	0.0001	0.365E-06	-0.0003	0.179E-06
MHLD23CB	-0.0091	0.935E-06	-0.0009	0.344E-06	-0.0008	0.512E-06	-0.0001	0.193E-06
MHLD23DA	0.0284	0.357E-05	0.0042	0.674E-06	0.0029	0.610E-06	0.0024	0.394E-06
MHLD23DB	0.0205	0.253E-05	0.0027	0.334E-06	0.0021	0.254E-06	0.0012	0.150E-06 ?
MHLD23FA	-0.0160	0.180E-05	-0.0020	0.339E-06	-0.0012	0.316E-06	-0.0001	0.135E-06
MHLD23FB	-0.0094	0.122E-05	-0.0015	0.298E-06	-0.0005	0.283E-06	0.0	0.707E-07
MHLD23FC	-0.0129	0.153E-05	-0.0024	0.356E-06	-0.0012	0.206E-06	-0.0007	0.957E-07
MHLD23GA	-0.0140	0.148E-05	-0.0016	0.308E-06	-0.0008	0.315E-06	-0.0003	0.110E-06
MHLD23HA	-0.0117	0.118E-05	-0.0019	0.231E-06	-0.0011	0.397E-06	-0.0008	0.139E-06
MHLD23IA	-0.0140	0.196E-05	-0.0020	0.305E-06	-0.0004	0.339E-06	-0.0003	0.541E-07
MHLD24BA	-0.0182	0.201E-05	-0.0016	0.229E-06	-0.0017	0.495E-06	-0.0002	0.155E-06
MHLD24CA	-0.0060	0.693E-06	-0.0019	0.289E-06	-0.0004	0.603E-06	0.0002	0.778E-07
MHLD24CB	-0.0606	0.607E-05	-0.0007	0.176E-06	-0.0008	0.418E-06	-0.0004	0.696E-07
MHLD24DA	-0.0058	0.727E-06	-0.0012	0.228E-06	-0.0012	0.430E-06	0.0001	0.776E-07
MHLD24EA	0.0005	0.212E-05	-0.0005	0.235E-06	0.0001	0.791E-06	0.0003	0.444E-06
MHLD24FA	-0.0062	0.866E-06	0.0006	0.939E-06	0.0002	0.303E-06	0.0	0.269E-07
MHLD24GA	-0.0085	0.906E-06	-0.0006	0.277E-06	-0.0029	0.609E-06	-0.0002	0.865E-07
MHLD24HA	-0.0152	0.201E-05	-0.0011	0.195E-06	-0.0011	0.367E-06	-0.0005	0.135E-06
MHLD24IA	-0.0068	0.815E-06	-0.0012	0.306E-06	-0.0003	0.173E-06	-0.0004	0.856E-07
MHLD24IB	0.0889	0.103E-04	-0.0010	0.117E-06	-0.0013	0.148E-06	-0.0002	0.776E-07
MHLD24KA	-0.0070	0.781E-06	-0.0009	0.197E-06	-0.0001	0.194E-06	-0.0004	0.718E-07
MHLD24KB	-0.0048	0.508E-06	-0.0002	0.112E-06	-0.0008	0.220E-06	0.0001	0.808E-07
MHLD24LA	-0.0048	0.522E-06	-0.0014	0.198E-06	-0.0005	0.718E-07	-0.0006	0.781E-07
MHLD24MA	-0.0051	0.560E-06	-0.0011	0.209E-06	-0.0004	0.258E-06	-0.0007	0.103E-06
MHLD25AA	-0.0053	0.543E-06	0.0024	0.418E-06	-0.0007	0.276E-06	0.0005	0.195E-06
MHLD25AB	-0.0057	0.933E-06	-0.0002	0.256E-06	0.0115	0.120E-05	-0.0014	0.147E-06
MHLD25BA	-0.0069	0.763E-06	-0.0006	0.282E-06	-0.0005	0.128E-06	-0.0002	0.364E-07
MHLD25BB	-0.0057	0.691E-06	-0.0003	0.216E-06	-0.0002	0.167E-06	-0.0002	0.324E-07
MHLD25CA	-0.0088	0.108E-05	-0.0014	0.359E-06	-0.0003	0.155E-06	0.0001	0.955E-07
MHLD25DA	-0.0147	0.148E-05	-0.0033	0.413E-06	-0.0019	0.301E-06	-0.0017	0.207E-06
MHLD25EA	-0.0173	0.183E-05	-0.0032	0.345E-06	-0.0014	0.170E-06	-0.0014	0.163E-06
MHLD25FA	-0.0126	0.133E-05	-0.0022	0.430E-06	-0.0012	0.323E-06	-0.0012	0.321E-06
MHLD25GA	-0.0242	0.265E-05	-0.0046	0.792E-06	-0.0025	0.501E-06	-0.0011	0.399E-06
MHLD25GB	-0.0113	0.130E-05	-0.0014	0.319E-06	-0.0001	0.297E-06	-0.0010	0.298E-06
MHLD25HA	-0.0283	0.386E-05	-0.0123	0.154E-05	-0.0096	0.123E-05	-0.0065	0.819E-06
MHLD25IA	-0.0062	0.823E-06	-0.0009	0.220E-06	-0.0002	0.115E-06	-0.0004	0.450E-07
MHLD26AA	-0.0117	0.121E-05	-0.0011	0.231E-06	-0.0003	0.199E-06	-0.0002	0.658E-07
MHLD26BA	-0.0054	0.672E-06	0.0008	0.115E-06	0.0001	0.173E-06	0.0001	0.320E-07
MHLD26BB	-0.0107	0.117E-05	-0.0019	0.376E-06	-0.0011	0.311E-06	-0.0003	0.102E-06
MHLD26BC	-0.0166	0.171E-05	-0.0034	0.398E-06	-0.0019	0.246E-06	-0.0016	0.185E-06
MHLD26BD	-0.0152	0.213E-05	-0.0012	0.442E-06	0.0000	0.361E-06	-0.0003	0.199E-06
MHLD26BE	-0.0256	0.277E-05	-0.0043	0.610E-06	-0.0020	0.451E-06	-0.0004	0.336E-06

*** DEMAGNETIZATION GRAPH ***

7554.11 ft.—7564.70 ft.



NO. OF POINTS OFF GRAPH = 3

X - ONE RESULT
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\# - MEAN INTENSITY
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****
* BRIDEN STABILITY INDEX *
****

Based on total magnetization (J).

SAMPLE	NRM-300	300-400	400-500
MHLD22DA	0.14	1.00	0.25
MHLD22DB	0.27	0.79	0.49
MHLD22FA	0.25	0.72	0.52
MHLD22FB	0.35	0.95	0.28
MHLD22GA	0.40	0.71	0.51
MHLD22GB	0.19	0.81	0.42
MHLD22HA	0.27	1.00	0.25
MHLD23AA	0.33	0.80	0.05
MHLD23CA	0.15	0.63	0.49
MHLD23CB	0.37	0.51	0.38
MHLD23DA	0.19	0.91	0.65
MHLD23DB	0.13	0.76	0.59
MHLD23FA	0.19	0.93	0.43
MHLD23FB	0.24	0.95	0.25
MHLD23FC	0.23	0.58	0.46
MHLD23GA	0.21	0.98	0.35
MHLD23HA	0.20	0.28	0.35
MHLD23IA	0.16	0.89	0.16
MHLD24BA	0.11	-0.16	0.31
MHLD24CA	0.42	-0.09	0.13
MHLD24CB	0.03	-0.38	0.17
MHLD24DA	0.31	0.11	0.18
MHLD24EA	0.11	-1.36	0.56
MHLD24FA	0.92	0.32	0.09
MHLD24GA	0.31	-0.20	0.14
MHLD24HA	0.10	0.12	0.37
MHLD24IA	0.38	0.57	0.49
MHLD24IB	0.01	0.73	0.53
MHLD24KA	0.25	0.99	0.37
MHLD24KB	0.22	0.04	0.37
MHLD24LA	0.38	0.36	0.91
MHLD24MA	0.37	0.76	0.40
MHLD25AA	0.77	0.66	0.71
MHLD25AB	0.27	-2.68	0.12
MHLD25BA	0.37	0.46	0.28
MHLD25BB	0.31	0.77	0.19
MHLD25CA	0.33	0.43	0.62
MHLD25DA	0.28	0.73	0.69
MHLD25EA	0.19	0.49	0.96
MHLD25FA	0.32	0.75	0.99
MHLD25GA	0.30	0.63	0.80
MHLD25GB	0.25	0.93	1.00
MHLD25HA	0.40	0.80	0.67
MHLD25IA	0.27	0.52	0.39
MHLD26AA	0.19	0.86	0.33
MHLD26BA	0.17	0.50	0.19
MHLD26BB	0.32	0.83	0.33
MHLD26BC	0.23	0.62	0.75
MHLD26BD	0.21	0.82	0.55
MHLD26BE	0.22	0.74	0.75
MEAN	0.27	0.50	0.44

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* BRIDEN STABILITY INDEX *
****

Based on vertical component only (X).

SAMPLE	NRM-300	300-400	400-500
MHLD22DA	0.09	0.67	0.29
MHLD22DB	0.16	0.41	0.0
MHLD22FA	0.18	0.70	0.86
MHLD22FB	0.18	0.73	0.56
MHLD22GA	0.29	-0.06	-5.50
MHLD22GB	0.08	0.33	0.75
MHLD22HA	0.15	0.71	0.65
MHLD23AA	0.13	0.11	-0.50
MHLD23CA	0.05	-0.07	-6.00
MHLD23CB	0.10	0.94	0.18
MHLD23DA	0.15	0.69	0.83
MHLD23DB	0.13	0.76	0.59
MHLD23FA	0.13	0.62	0.04
MHLD23FB	0.16	0.32	0.0
MHLD23FC	0.18	0.53	0.56
MHLD23GA	0.12	0.45	0.40
MHLD23HA	0.16	0.61	0.74
MHLD23IA	0.14	0.22	0.78
MHLD24BA	0.09	0.94	0.12
MHLD24CA	0.32	0.21	-0.50
MHLD24CB	0.01	0.86	0.44
MHLD24DA	0.22	0.96	-0.12
MHLD24EA	-0.91	-0.20	-1.50
MHLD24FA	-0.10	0.33	0.0
MHLD24GA	0.07	-2.75	0.09
MHLD24HA	0.07	1.00	0.45
MHLD24IA	0.18	0.25	0.67
MHLD24IB	-0.01	0.70	0.15
MHLD24KA	0.13	0.11	-2.50
MHLD24KB	0.05	-1.20	-0.06
MHLD24LA	0.29	0.36	0.80
MHLD24MA	0.23	0.35	0.13
MHLD25AA	-0.45	-0.29	-0.79
MHLD25AB	0.04	-46.00	-0.12
MHLD25BA	0.09	0.92	0.36
MHLD25BB	0.06	0.57	1.00
MHLD25CA	0.16	0.21	-0.33
MHLD25DA	0.22	0.57	0.92
MHLD25EA	0.18	0.44	0.96
MHLD25FA	0.18	0.51	0.91
MHLD25GA	0.19	0.54	0.46
MHLD25GB	0.12	0.07	-8.00
MHLD25HA	0.43	0.78	0.68
MHLD25IA	0.15	0.22	0.25
MHLD26AA	0.09	0.29	0.50
MHLD26BA	-0.16	0.06	0.00
MHLD26BB	0.18	0.55	0.33
MHLD26BC	0.20	0.57	0.82
MHLD26BD	0.08	-0.04	-5.00
MHLD26BE	0.17	0.46	0.22
MEAN	0.10	-0.58	-0.27
		0.35*	

*Recalulated omitting 25 AB

****
* INCLINATION AND PALEOLATITUDE *
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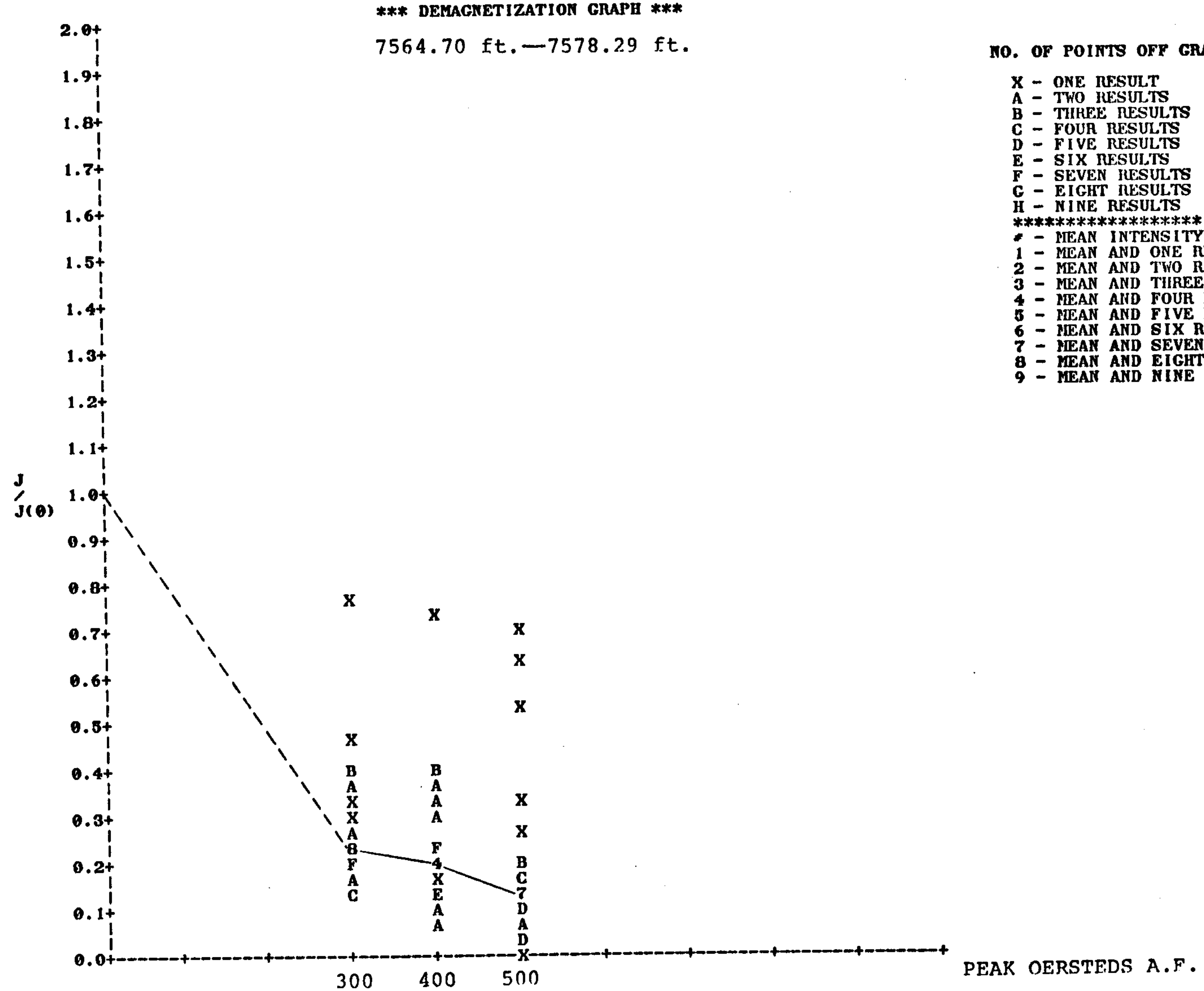
SAMPLE	NRM	300	400	500
MHLD22DA	49.9	29.8	19.3	22.4
MHLD22DB	72.0	35.3	17.6	0.0
MHLD22FA	56.2	36.3	18.8	32.2
MHLD22FB	69.9	28.9	21.8	48.1
MHLD22GA	63.9	40.5	-3.3	38.2
MHLD22GB	62.0	20.8	5.7	17.4
MHLD22HA	51.7	26.5	18.7	56.7
MHLD23AA	74.8	21.4	1.9	-19.5
MHLD23CA	56.8	15.2	-0.8	9.6
MHLD23CB	76.6	15.2	9.5	4.5
MHLD23DA	-52.7	-38.6	-28.4	-37.6
MHLD23DB	-54.4	-54.0	-53.8	-53.1
MHLD23FA	62.9	36.2	23.3	2.1
MHLD23FB	50.6	31.3	10.2	0.0
MHLD23FC	57.5	41.3	37.4	47.0
MHLD23GA	70.8	32.4	13.8	15.9
MHLD23HA	87.4	55.4	16.8	37.7
MHLD23IA	45.5	40.9	7.6	40.3
MHLD24BA	65.1	44.4	20.1	7.4
MHLD24CA	60.8	42.5	3.8	-14.9
MHLD24CB	87.4	23.4	11.0	30.2
MHLD24DA	52.3	33.3	16.2	-11.1
MHLD24EA	-1.5	12.3	-0.7	-4.5
MHLD24FA	45.7	-3.7	-3.8	0.0
MHLD24GA	69.7	12.5	27.9	16.8
MHLD24HA	49.4	34.4	17.4	21.8
MHLD24IA	57.2	23.1	10.0	27.9
MHLD24IB	-60.1	59.0	61.6	14.9
MHLD24KA	64.6	28.8	2.9	38.8
MHLD24KB	71.0	12.8	21.3	-3.5
MHLD24LA	68.4	44.9	44.2	50.2
MHLD24MA	65.7	33.4	8.9	47.0
MHLD25AA	80.5	-35.0	14.7	-16.4
MHLD25AB	38.0	5.6	-73.8	72.1
MHLD25BA	64.7	12.3	25.4	33.3
MHLD25BB	55.6	9.3	6.9	38.1
MHLD25CA	55.2	23.0	11.2	-6.0
MHLD25DA	83.9	51.9	38.0	55.0
MHLD25EA	71.2	65.8	55.5	62.6
MHLD25FA	70.5	31.5	20.9	22.9
MHLD25GA	66.0	35.5	29.9	16.7
MHLD25GB	60.5	26.1	1.9	19.6
MHLD25HA	47.1	53.0	51.2	52.5
MHLD25IA	48.9	24.1	10.0	51.1
MHLD26AA	74.7	27.1	8.7	13.2
MHLD26BA	54.2	-47.6	-1.7	-18.2
MHLD26BB	66.3	30.4	19.7	20.1
MHLD26BC	77.2	58.8	52.4	59.7
MHLD26BD	45.8	16.4	-0.8	7.2
MHLD26BE	67.6	45.5	26.3	7.7
MEAN	57.9	28.6	16.8	23.2
PALEOLAT.	38.5	15.2	8.6	12.1

CRYOGENIC MAGNETOMETER OUTPUT

SAMPLE	H=NRM X	H=NRM J	H=300 X	H=300 J	H=400 X	H=400 J	H=500 X	H=500 J
MHLD27BA	-0.0160	0.162E-05	-0.0018	0.352E-06	0.0005	0.189E-06	-0.0004	0.142E-06
MHLD27BB	-0.0097	0.870E-05	-0.0009	0.670E-05	0.0003	0.626E-05	0.0011	0.509E-05
MHLD27BC	-0.0122	0.125E-05	-0.0012	0.356E-06	-0.0006	0.296E-06	-0.0003	0.702E-07
MHLD27BD	-0.0232	0.331E-05	-0.0026	0.586E-06	-0.0005	0.473E-06	-0.0003	0.235E-06
MHLD27BE	-0.0111	0.150E-05	-0.0020	0.527E-06	-0.0010	0.358E-06	-0.0003	0.185E-06
MHLD27BF	-0.0141	0.156E-05	-0.0017	0.605E-06	-0.0008	0.515E-06	-0.0001	0.248E-06
MHLD27CA	-0.0203	0.205E-05	-0.0028	0.433E-06	-0.0008	0.426E-06	-0.0001	0.202E-06
MHLD27CC	-0.0245	0.283E-05	-0.0034	0.964E-06	-0.0013	0.854E-06	-0.0016	0.575E-06
MHLD27CD	-0.0153	0.153E-05	-0.0013	0.618E-06	-0.0005	0.603E-06	-0.0001	0.316E-06
MHLD27DA	-0.0143	0.214E-05	-0.0022	0.378E-06	-0.0004	0.363E-06	-0.0002	0.986E-07
MHLD28AA	-0.0157	0.202E-05	-0.0014	0.285E-06	-0.0006	0.311E-06	-0.0000	0.209E-06
MHLD28AB	-0.0140	0.157E-05	-0.0040	0.598E-06	-0.0009	0.275E-06	-0.0014	0.276E-06
MHLD28AC	-0.0117	0.133E-05	-0.0014	0.311E-06	-0.0005	0.306E-06	-0.0000	0.273E-06
MHLD28AB	-0.0109	0.120E-05	-0.0007	0.195E-06	-0.0004	0.270E-06	0.0003	0.391E-07
MHLD28AE	-0.0165	0.182E-05	-0.0030	0.386E-06	-0.0014	0.327E-06	-0.0011	0.198E-06
MHLD28BA	-0.0288	0.314E-05	-0.0060	0.665E-06	-0.0034	0.396E-06	-0.0025	0.263E-06
MHLD28BB	-0.0253	0.299E-05	-0.0049	0.707E-06	-0.0020	0.438E-06	-0.0003	0.317E-06
MHLD28BC	-0.0311	0.368E-05	-0.0054	0.707E-06	-0.0029	0.493E-06	-0.0018	0.354E-06
MHLD28CA	-0.0401	0.409E-05	-0.0061	0.652E-06	-0.0035	0.407E-06	-0.0022	0.254E-06
MHLD28CB	-0.0485	0.494E-05	-0.0084	0.952E-06	-0.0127	0.155E-05	-0.0036	0.432E-06
MHLD28CC	-0.0076	0.921E-06	-0.0011	0.415E-06	-0.0013	0.363E-06	-0.0013	0.304E-06
MHLD28DA	-0.0116	0.170E-05	-0.0023	0.407E-06	-0.0017	0.496E-06	-0.0007	0.112E-06
MHLD28DB	-0.0172	0.173E-05	-0.0019	0.323E-06	-0.0007	0.262E-06	-0.0001	0.214E-06
MHLD28DC	-0.0226	0.229E-05	-0.0013	0.453E-06	-0.0007	0.387E-06	-0.0002	0.232E-06
MHLD28EA	-0.0132	0.152E-05	-0.0024	0.279E-06	-0.0015	0.261E-06	-0.0012	0.127E-06
MHLD28FA	-0.0062	0.660E-06	-0.0009	0.128E-06	0.0000	0.242E-06	0.0003	0.492E-07
MHLD29AA	-0.0072	0.886E-06	-0.0011	0.144E-06	-0.0006	0.626E-07	0.0	0.112E-07
MHLD29AB	-0.0102	0.128E-05	-0.0019	0.272E-06	-0.0003	0.312E-06	-0.0008	0.183E-06
MHLD29AC	-0.0165	0.168E-05	-0.0023	0.345E-06	-0.0008	0.335E-06	-0.0085	0.105E-05
MHLD29BA	-0.0079	0.796E-06	-0.0015	0.149E-06	-0.0006	0.285E-06	-0.0011	0.413E-06
MHLD29BB	-0.0073	0.782E-06	-0.0011	0.286E-06	-0.0003	0.307E-06	-0.0005	0.206E-06
MHLD29BC	-0.0133	0.140E-05	-0.0022	0.325E-06	-0.0015	0.331E-06	-0.0003	0.758E-07
MHLD29BD	-0.0106	0.109E-05	-0.0011	0.270E-06	-0.0004	0.264E-06	-0.0001	0.354E-07
MHLD29BE	-0.0141	0.160E-05	-0.0023	0.270E-06	-0.0017	0.205E-06	-0.0020	0.267E-06
MHLD29CA	-0.0268	0.286E-05	-0.0033	0.530E-06	-0.0013	0.375E-06	-0.0007	0.114E-06
MHLD29CB	-0.0296	0.315E-05	-0.0045	0.629E-06	-0.0025	0.396E-06	-0.0037	0.448E-06
MHLD29DA	-0.0254	0.257E-05	-0.0021	0.508E-06	-0.0013	0.345E-06	-0.0001	0.324E-06
MHLD29DB	-0.0347	0.361E-05	-0.0051	0.570E-06	-0.0010	0.456E-06	0.0001	0.495E-06
MHLD29DC	-0.0349	0.376E-05	-0.0055	0.687E-06	-0.0032	0.666E-06	-0.0028	0.562E-06
MHLD29DD	-0.0280	0.285E-05	-0.0036	0.423E-06	-0.0016	0.347E-06	0.0	0.202E-06
MHLD29DE	-0.0291	0.332E-05	-0.0069	0.749E-06	-0.0049	0.532E-06	-0.0038	0.435E-06
MHLD29DF	-0.0293	0.312E-05	-0.0051	0.785E-06	-0.0028	0.663E-06	-0.0013	0.321E-06
MHLD30AA	-0.0513	0.591E-05	-0.0101	0.114E-05	-0.0052	0.750E-06	-0.0039	0.497E-06
MHLD30BA	-0.0542	0.576E-05	-0.0056	0.701E-06	-0.0027	0.460E-06	-0.0016	0.193E-06
MHLD30BB	-0.0615	0.628E-05	-0.0061	0.855E-06	-0.0030	0.660E-06	-0.0014	0.435E-06
MHLD30CA	-0.0238	0.266E-05	-0.0031	0.449E-06	-0.0006	0.330E-06	-0.0000	0.199E-06
MHLD30CB	-0.0273	0.276E-05	-0.0027	0.406E-06	-0.0009	0.320E-06	-0.0004	0.200E-06
MHLD30CC	-0.0175	0.181E-05	-0.0018	0.287E-06	-0.0007	0.312E-06	-0.0005	0.119E-06
MHLD30DA	-0.0120	0.126E-05	-0.0025	0.273E-06	-0.0018	0.176E-06	-0.0013	0.144E-06
MHLD30DB	-0.0144	0.153E-05	-0.0021	0.262E-06	-0.0010	0.307E-06	-0.0007	0.132E-06

*** DEMAGNETIZATION GRAPH ***

7564.70 ft.—7578.29 ft.



NO. OF POINTS OFF GRAPH = 3

X - ONE RESULT
A - TWO RESULTS
B - THREE RESULTS
C - FOUR RESULTS
D - FIVE RESULTS
E - SIX RESULTS
F - SEVEN RESULTS
G - EIGHT RESULTS
H - NINE RESULTS
****
- MEAN INTENSITY
1 - MEAN AND ONE RESULT
2 - MEAN AND TWO RESULTS
3 - MEAN AND THREE RESULTS
4 - MEAN AND FOUR RESULTS
5 - MEAN AND FIVE RESULTS
6 - MEAN AND SIX RESULTS
7 - MEAN AND SEVEN RESULTS
8 - MEAN AND EIGHT RESULTS
9 - MEAN AND NINE RESULTS

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*** BRIDEN STABILITY INDEX ***
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Based on total magnetization (J).

SAMPLE	NRM-300	300-400	400-500
MHLD27BA	0.22	0.54	0.75
MHLD27BB	0.77	0.93	0.94
MHLD27BC	0.28	0.83	0.24
MHLD27BD	0.18	0.81	0.50
MHLD27BE	0.35	0.68	0.52
MHLD27BF	0.39	0.85	0.48
MHLD27CA	0.21	0.98	0.47
MHLD27CC	0.34	0.89	0.67
MHLD27CD	0.40	0.97	0.52
MHLD27DA	0.18	0.96	0.27
MHLD28AA	0.14	0.91	0.67
MHLD28AB	0.38	0.46	1.00
MHLD28AC	0.23	0.98	0.89
MHLD28AB	0.16	0.61	0.14
MHLD28AE	0.21	0.85	0.61
MHLD28BA	0.21	0.60	0.66
MHLD28BB	0.24	0.62	0.72
MHLD28BC	0.19	0.70	0.72
MHLD28CA	0.16	0.62	0.62
MHLD28CB	0.19	0.37	0.28
MHLD28CC	0.45	0.88	0.84
MHLD28DA	0.24	0.78	0.23
MHLD28DB	0.19	0.81	0.82
MHLD28DC	0.20	0.85	0.60
MHLD28EA	0.18	0.94	0.49
MHLD28FA	0.19	0.11	0.20
MHLD29AA	0.16	0.44	0.18
MHLD29AB	0.21	0.85	0.59
MHLD29AC	0.21	0.97	-1.15
MHLD29BA	0.19	0.09	0.55
MHLD29BB	0.37	0.93	0.67
MHLD29BC	0.23	0.98	0.23
MHLD29BD	0.25	0.98	0.13
MHLD29BE	0.17	0.76	0.70
MHLD29CA	0.19	0.71	0.30
MHLD29CB	0.20	0.63	0.87
MHLD29DA	0.20	0.68	0.94
MHLD29DB	0.16	0.80	0.92
MHLD29DC	0.18	0.97	0.84
MHLD29DD	0.15	0.82	0.58
MHLD29DE	0.23	0.71	0.82
MHLD29DF	0.25	0.84	0.48
MHLD30AA	0.19	0.66	0.66
MHLD30BA	0.12	0.66	0.42
MHLD30BB	0.14	0.77	0.66
MHLD30CA	0.17	0.73	0.60
MHLD30CB	0.15	0.79	0.63
MHLD30CC	0.16	0.91	0.38
MHLD30DA	0.22	0.64	0.82
MHLD30DB	0.17	0.83	0.43
MEAN	0.23	0.75	0.54

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* BRIDEN STABILITY INDEX *
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Based on vertical component only (X).

SAMPLE	NRM-300	300-400	400-500
MHLD27BA	0.11	-0.25	-1.00
MHLD27BB	0.09	-0.28	-2.20
MHLD27BC	0.10	0.48	0.58
MHLD27BD	0.11	0.20	0.60
MHLD27BE	0.18	0.50	0.35
MHLD27BF	0.12	0.47	0.19
MHLD27CA	0.14	0.30	0.06
MHLD27CC	0.14	0.38	0.73
MHLD27CD	0.09	0.42	0.27
MHLD27DA	0.16	0.18	0.50
MHLD28AA	0.09	0.44	0.00
MHLD28AB	0.29	0.23	0.39
MHLD28AC	0.11	0.37	0.10
MHLD28AB	0.06	0.69	-0.67
MHLD28AE	0.18	0.48	0.79
MHLD28BA	0.21	0.56	0.74
MHLD28BB	0.19	0.41	0.15
MHLD28BC	0.18	0.54	0.59
MHLD28CA	0.15	0.57	0.61
MHLD28CB	0.17	0.49	0.28
MHLD28CC	0.14	0.77	0.93
MHLD28DA	0.20	0.74	0.44
MHLD28DB	0.11	0.36	0.07
MHLD28DC	0.06	0.56	0.27
MHLD28EA	0.18	0.65	0.81
MHLD28FA	0.15	0.0	0.0
MHLD29AA	0.15	0.55	0.0
MHLD29AB	0.18	0.19	-0.29
MHLD29AC	0.14	0.34	-8.69
MHLD29BA	0.18	0.41	0.08
MHLD29BB	0.15	0.27	0.33
MHLD29BC	0.17	0.67	0.20
MHLD29BD	0.11	0.35	0.37
MHLD29BE	0.17	0.72	0.82
MHLD29CA	0.12	0.39	0.58
MHLD29CB	0.15	0.54	0.47
MHLD29DA	0.08	0.60	0.04
MHLD29DB	0.15	0.19	-0.11
MHLD29DC	0.16	0.57	0.90
MHLD29DD	0.13	0.44	0.0
MHLD29DE	0.24	0.71	0.78
MHLD29DF	0.17	0.55	0.45
MHLD30AA	0.20	0.51	0.76
MHLD30BA	0.10	0.49	0.58
MHLD30BB	0.10	0.48	0.47
MHLD30CA	0.12	0.21	0.08
MHLD30CB	0.10	0.33	0.50
MHLD30CC	0.10	0.39	0.71
MHLD30DA	0.20	0.71	0.74
MHLD30DB	0.15	0.48	0.65
MEAN	0.14	0.43	0.12

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* INCLINATION AND PALEOLATITUDE *
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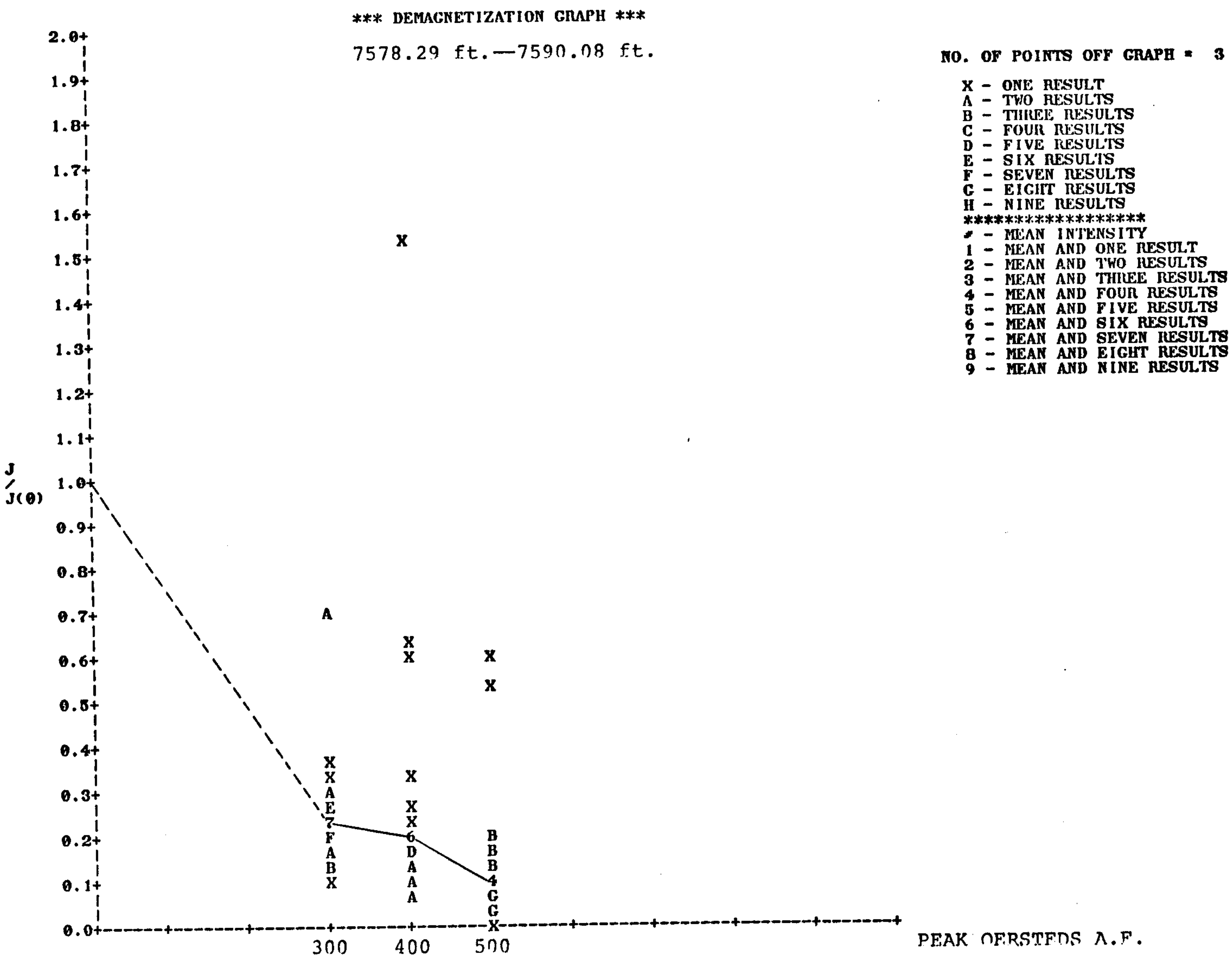
SAMPLE	NRM	300	400	500
MHLD27BA	80.2	30.8	-13.8	18.4
MHLD27BB	6.4	0.8	-0.2	-1.0
MHLD27BC	78.1	20.5	11.7	29.9
MHLD27BD	44.5	25.8	6.1	7.3
MHLD27BE	48.0	22.3	16.2	10.9
MHLD27BF	64.5	16.3	8.9	3.5
MHLD27CA	81.3	41.1	11.5	1.4
MHLD27CC	59.9	21.0	8.8	16.7
MHLD27CD	86.0	12.1	5.2	2.7
MHLD27DA	41.9	36.6	6.3	11.7
MHLD28AA	50.9	28.3	11.1	0.0
MHLD28AB	63.3	42.0	19.1	31.6
MHLD28AC	62.0	25.7	9.4	1.0
MHLD28AB	64.8	19.5	9.6	-50.2
MHLD28AE	65.2	51.0	26.3	35.5
MHLD28BA	66.9	65.6	59.2	72.1
MHLD28BB	57.7	43.3	27.1	5.4
MHLD28BC	57.8	50.4	36.8	29.6
MHLD28CA	78.3	70.7	59.3	57.9
MHLD28CB	79.0	62.6	55.3	55.3
MHLD28CC	55.6	15.4	21.8	24.3
MHLD28DA	43.1	34.4	20.0	42.2
MHLD28DB	84.3	37.2	15.5	1.3
MHLD28DC	80.6	17.4	11.2	5.0
MHLD28EA	60.4	59.5	36.4	78.7
MHLD28FA	69.9	44.8	-0.0	-37.5
MHLD29AA	54.9	50.0	73.3	0.0
MHLD29AB	53.1	42.9	6.4	25.9
MHLD29AC	79.7	42.9	13.8	54.2
MHLD29BA	83.1	76.3	12.1	16.2
MHLD29BB	69.0	22.6	5.6	14.0
MHLD29BC	72.6	43.8	26.9	23.3
MHLD29BD	76.5	25.2	8.7	25.1
MHLD29BE	61.6	60.7	55.9	48.5
MHLD29CA	69.8	38.5	20.3	41.1
MHLD29CB	69.9	45.6	38.2	56.7
MHLD29DA	82.0	25.0	22.1	0.9
MHLD29DB	74.2	63.4	12.0	-1.2
MHLD29DC	68.2	53.2	28.2	30.5
MHLD29DD	78.7	59.5	27.4	0.0
MHLD29DE	61.3	68.1	67.1	60.9
MHLD29DF	70.0	40.5	25.0	22.9
MHLD30AA	60.3	62.7	43.9	52.7
MHLD30BA	70.5	53.7	36.7	56.0
MHLD30BB	78.2	45.5	26.5	18.8
MHLD30CA	76.3	43.7	11.4	1.4
MHLD30CB	82.0	41.7	16.3	13.0
MHLD30CC	74.2	38.8	13.0	24.9
MHLD30DA	73.1	63.8	84.1	64.9
MHLD30DB	70.1	53.2	19.0	29.5
MEAN	66.8	41.1	23.7	24.5
PALEOLAT.	49.4	23.6	12.4	12.8

CRYOGENIC MAGNETOMETER OUTPUT

	H=NRM		H=300		H=400		H=500	
SAMPLE	X	J	X	J	X	J	X	J
MHLD30EA	-0.0252	0.259E-05	-0.0038	0.723E-06	-0.0015	0.454E-06	-0.0007	0.203E-06
MHLD30FA	-0.0156	0.211E-05	-0.0024	0.438E-06	-0.0017	0.415E-06	-0.0008	0.311E-06
MHLD30FB	-0.0311	0.113E-04	-0.0187	0.777E-05	-0.0148	0.711E-05	-0.0144	0.673E-05
MHLD30FC	-0.0208	0.212E-05	-0.0025	0.391E-06	-0.0012	0.324E-06	-0.0002	0.280E-06
MHLD30GA	-0.0184	0.194E-05	-0.0025	0.634E-06	-0.0015	0.297E-06	-0.0005	0.837E-07
MHLD31AA	-0.0054	0.175E-05	-0.0004	0.121E-05	-0.0001	0.104E-05	0.0007	0.893E-06
MHLD31BA	-0.0182	0.187E-05	-0.0028	0.476E-06	-0.0013	0.378E-06	-0.0007	0.290E-06
MHLD31BB	-0.0163	0.165E-05	-0.0016	0.303E-06	-0.0007	0.327E-06	0.0001	0.234E-06
MHLD31DA	-0.0190	0.196E-05	-0.0032	0.382E-06	-0.0019	0.327E-06	-0.0001	0.198E-06
MHLD31DB	-0.0163	0.173E-05	-0.0020	0.215E-06	-0.0009	0.118E-06	-0.0001	0.101E-06
MHLD31DC	-0.0238	0.249E-05	-0.0037	0.440E-06	-0.0018	0.257E-06	-0.0007	0.114E-06
MHLD31DD	-0.0410	0.415E-05	-0.0085	0.906E-06	-0.0054	0.575E-06	-0.0033	0.343E-06
MHLD31DE	-0.0631	0.638E-05	-0.0121	0.131E-05	-0.0075	0.869E-06	-0.0032	0.520E-06
MHLD31EA	-0.0270	0.271E-05	-0.0035	0.493E-06	-0.0020	0.401E-06	-0.0007	0.201E-06
MHLD31FA	-0.0232	0.495E-05	-0.0032	0.131E-05	-0.0015	0.104E-05	-0.0000	0.907E-06
MHLD31FB	-0.0174	0.184E-05	-0.0033	0.653E-06	-0.0017	0.590E-06	-0.0001	0.328E-06
MHLD31FC	-0.0172	0.216E-05	-0.0030	0.456E-06	0.0014	0.324E-05	-0.0007	0.125E-06
MHLD32AA	-0.0242	0.283E-05	-0.0037	0.584E-06	-0.0016	0.464E-06	0.0008	0.270E-06
MHLD32AB	-0.0290	0.241E-05	-0.0040	0.538E-06	-0.0022	0.393E-06	-0.0004	0.232E-06
MHLD32AC	-0.0228	0.242E-05	-0.0054	0.613E-06	-0.0015	0.368E-06	-0.0010	0.217E-06
MHLD32BA	-0.0224	0.245E-05	-0.0036	0.463E-06	-0.0023	0.304E-06	-0.0008	0.101E-06
MHLD32CA	-0.0180	0.201E-05	-0.0025	0.311E-06	-0.0016	0.223E-06	-0.0004	0.103E-06
MHLD32DA	-0.0148	0.153E-05	-0.0014	0.255E-06	-0.0009	0.135E-06	0.0001	0.548E-07
MHLD32EA	-0.0140	0.145E-05	0.0014	0.257E-06	0.0010	0.174E-06	0.0012	0.145E-06
MHLD32FA	-0.0111	0.119E-05	-0.0023	0.320E-06	-0.0010	0.188E-06	-0.0005	0.853E-07
MHLD32GA	0.0112	0.118E-05	-0.0019	0.194E-06	-0.0012	0.141E-06	-0.0012	0.179E-06
MHLD32HA	-0.0112	0.114E-05	-0.0015	0.260E-06	-0.0005	0.213E-06	-0.0004	0.763E-07
MHLD32IA	-0.0128	0.132E-05	-0.0026	0.337E-06	-0.0006	0.163E-06	-0.0002	0.135E-06
MHLD33AA	-0.0146	0.154E-05	-0.0019	0.291E-06	-0.0007	0.132E-06	-0.0001	0.308E-07
MHLD33AB	-0.0209	0.220E-05	-0.0025	0.396E-06	-0.0011	0.280E-06	-0.0007	0.834E-07
MHLD33AC	-0.0199	0.206E-05	-0.0025	0.354E-06	-0.0009	0.195E-06	-0.0006	0.174E-06
MHLD33AD	-0.0192	0.199E-05	-0.0019	0.288E-06	-0.0008	0.190E-06	-0.0004	0.157E-06
MHLD33AE	-0.0152	0.156E-05	-0.0021	0.271E-06	-0.0014	0.189E-06	-0.0010	0.307E-06
MHLD33AF	-0.0147	0.151E-05	-0.0028	0.291E-06	-0.0012	0.134E-06	-0.0004	0.550E-07
MHLD33AG	-0.0124	0.127E-05	-0.0019	0.229E-06	-0.0014	0.185E-06	0.0003	0.644E-07
MHLD33BA	-0.0098	0.105E-05	-0.0024	0.319E-06	-0.0010	0.177E-06	-0.0010	0.211E-06
MHLD33BB	-0.0146	0.158E-05	-0.0025	0.357E-06	-0.0016	0.374E-06	-0.0006	0.618E-07
MHLD33CA	0.0184	0.195E-05	0.0024	0.300E-06	0.0012	0.191E-06	0.0018	0.197E-06
MHLD33CB	0.0141	0.143E-05	0.0029	0.374E-06	0.0022	0.263E-06	0.0006	0.820E-07 ?
MHLD33DA	-0.0127	0.139E-05	-0.0026	0.265E-06	-0.0018	0.210E-06	-0.0011	0.137E-06
MHLD33DB	-0.0400	0.444E-05	-0.0050	0.507E-06	-0.0027	0.329E-06	0.0003	0.319E-06
MHLD33DC	-0.0247	0.277E-05	-0.0036	0.363E-06	-0.0024	0.281E-06	-0.0003	0.430E-07
MHLD34AA	-0.0199	0.239E-05	-0.0031	0.488E-06	-0.0021	0.426E-06	0.0002	0.211E-06
MHLD34AB	-0.0356	0.356E-05	-0.0053	0.661E-06	-0.0029	0.504E-06	-0.0010	0.235E-06
MHLD34AC	-0.0366	0.370E-05	-0.0069	0.802E-06	-0.0035	0.663E-06	-0.0015	0.356E-06
MHLD34AD	-0.0291	0.293E-05	-0.0050	0.636E-06	-0.0022	0.478E-06	-0.0009	0.308E-06
MHLD34BA	-0.0456	0.481E-05	-0.0061	0.726E-06	-0.0040	0.495E-06	-0.0011	0.266E-06
MHLD34BB	-0.0445	0.481E-05	-0.0072	0.876E-06	-0.0036	0.584E-06	-0.0012	0.286E-06
MHLD34BC	-0.0403	0.456E-05	-0.0061	0.736E-06	-0.0036	0.510E-06	-0.0010	0.251E-06
MHLD34CA	-0.0118	0.123E-05	-0.0025	0.281E-06	-0.0014	0.331E-06	-0.0008	0.840E-07


*** DEMAGNETIZATION GRAPH ***
7578.29 ft.—7590.08 ft.
J / J(0)
PEAK OERSTEDS A.F.
300
400
500
NO. OF POINTS OFF GRAPH = 3
X - ONE RESULT
A - TWO RESULTS
B - THREE RESULTS
C - FOUR RESULTS
D - FIVE RESULTS
E - SIX RESULTS
F - SEVEN RESULTS
G - EIGHT RESULTS
H - NINE RESULTS
****
- MEAN INTENSITY
1 - MEAN AND ONE RESULT
2 - MEAN AND TWO RESULTS
3 - MEAN AND THREE RESULTS
4 - MEAN AND FOUR RESULTS
5 - MEAN AND FIVE RESULTS
6 - MEAN AND SIX RESULTS
7 - MEAN AND SEVEN RESULTS
8 - MEAN AND EIGHT RESULTS
9 - MEAN AND NINE RESULTS

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* BRIDEN STABILITY INDEX *
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Based on total magnetization (J).

SAMPLE	NRM-300	300-400	400-500
MHLD30EA	0.28	0.63	0.45
MHLD30FA	0.21	0.95	0.75
MHLD30FB	0.69	0.92	0.95
MHLD30FC	0.18	0.83	0.86
MHLD30CA	0.33	0.47	0.28
MHLD31AA	0.69	0.85	0.86
MHLD31BA	0.25	0.79	0.77
MHLD31BB	0.18	0.92	0.72
MHLD31DA	0.19	0.86	0.60
MHLD31DB	0.12	0.55	0.86
MHLD31DC	0.18	0.58	0.44
MHLD31DD	0.22	0.63	0.60
MHLD31DE	0.21	0.66	0.60
MHLD31EA	0.18	0.81	0.50
MHLD31FA	0.26	0.79	0.87
MHLD31FB	0.35	0.90	0.56
MHLD31FC	0.21	-5.12	0.04
MHLD32AA	0.21	0.79	0.58
MHLD32AB	0.22	0.73	0.59
MHLD32AC	0.25	0.60	0.59
MHLD32BA	0.19	0.66	0.33
MHLD32CA	0.15	0.72	0.46
MHLD32DA	0.17	0.53	0.41
MHLD32EA	0.18	0.68	0.83
MHLD32FA	0.27	0.59	0.45
MHLD32GA	0.17	0.72	0.73
MHLD32HA	0.23	0.82	0.36
MHLD32IA	0.26	0.48	0.83
MHLD33AA	0.19	0.45	0.23
MHLD33AB	0.18	0.71	0.30
MHLD33AC	0.17	0.55	0.90
MHLD33AD	0.15	0.66	0.83
MHLD33AE	0.17	0.70	0.38
MHLD33AF	0.19	0.46	0.41
MHLD33AG	0.18	0.81	0.35
MHLD33BA	0.30	0.55	0.81
MHLD33BB	0.23	0.95	0.17
MHLD33CA	0.15	0.64	0.97
MHLD33CB	0.26	0.70	0.31
MHLD33DA	0.19	0.79	0.65
MHLD33DB	0.11	0.65	0.97
MHLD33DC	0.13	0.78	0.15
MHLD34AA	0.20	0.87	0.49
MHLD34AB	0.19	0.76	0.47
MHLD34AC	0.22	0.83	0.54
MHLD34AD	0.22	0.75	0.64
MHLD34BA	0.15	0.68	0.54
MHLD34BB	0.18	0.67	0.49
MHLD34BC	0.16	0.69	0.49
MHLD34CA	0.23	0.82	0.25
MEAN	0.22	0.60	0.56

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* BRIDEN STABILITY INDEX *
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Based on vertical component only (X).

SAMPLE	NRM-300	300-400	400-500
MHLD30EA	0.15	0.41	0.43
MHLD30FA	0.15	0.73	0.43
MHLD30FB	0.60	0.79	0.97
MHLD30FC	0.12	0.49	0.21
MHLD30GA	0.13	0.63	0.32
MHLD31AA	0.07	0.38	-4.67
MHLD31BA	0.15	0.48	0.52
MHLD31BB	0.10	0.42	-0.07
MHLD31DA	0.17	0.58	0.08
MHLD31DB	0.12	0.45	0.06
MHLD31DC	0.16	0.47	0.37
MHLD31DD	0.21	0.64	0.61
MHLD31DE	0.19	0.62	0.42
MHLD31EA	0.13	0.56	0.37
MHLD31FA	0.14	0.45	0.03
MHLD31FB	0.19	0.52	0.03
MHLD31FC	0.17	-0.47	-0.46
MHLD32AA	0.15	0.45	-0.52
MHLD32AB	0.20	0.55	0.20
MHLD32AC	0.24	0.27	0.66
MHLD32BA	0.16	0.63	0.38
MHLD32CA	0.14	0.65	0.25
MHLD32DA	0.10	0.66	-0.11
MHLD32EA	-0.10	0.74	0.80
MHLD32FA	0.21	0.43	0.55
MHLD32GA	-0.17	0.66	0.92
MHLD32HA	0.14	0.35	0.73
MHLD32IA	0.20	0.25	0.31
MHLD33AA	0.13	0.36	0.21
MHLD33AB	0.12	0.45	0.61
MHLD33AC	0.13	0.37	0.63
MHLD33AD	0.10	0.44	0.53
MHLD33AE	0.14	0.67	0.75
MHLD33AF	0.19	0.43	0.37
MHLD33AG	0.16	0.69	-0.22
MHLD33BA	0.24	0.42	1.00
MHLD33BB	0.17	0.64	0.37
MHLD33CA	0.13	0.52	0.56
MHLD33CB	0.21	0.73	0.30
MHLD33DA	0.21	0.70	0.59
MHLD33DB	0.12	0.55	-0.11
MHLD33DC	0.15	0.67	0.15
MHLD34AA	0.16	0.68	-0.10
MHLD34AB	0.15	0.55	0.36
MHLD34AC	0.19	0.51	0.41
MHLD34AD	0.17	0.45	0.40
MHLD34BA	0.13	0.66	0.27
MHLD34BB	0.16	0.50	0.33
MHLD34BC	0.15	0.58	0.28
MHLD34CA	0.21	0.56	0.57
MEAN	0.16	0.52	0.24

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* INCLINATION AND PALEOLATITUDE *
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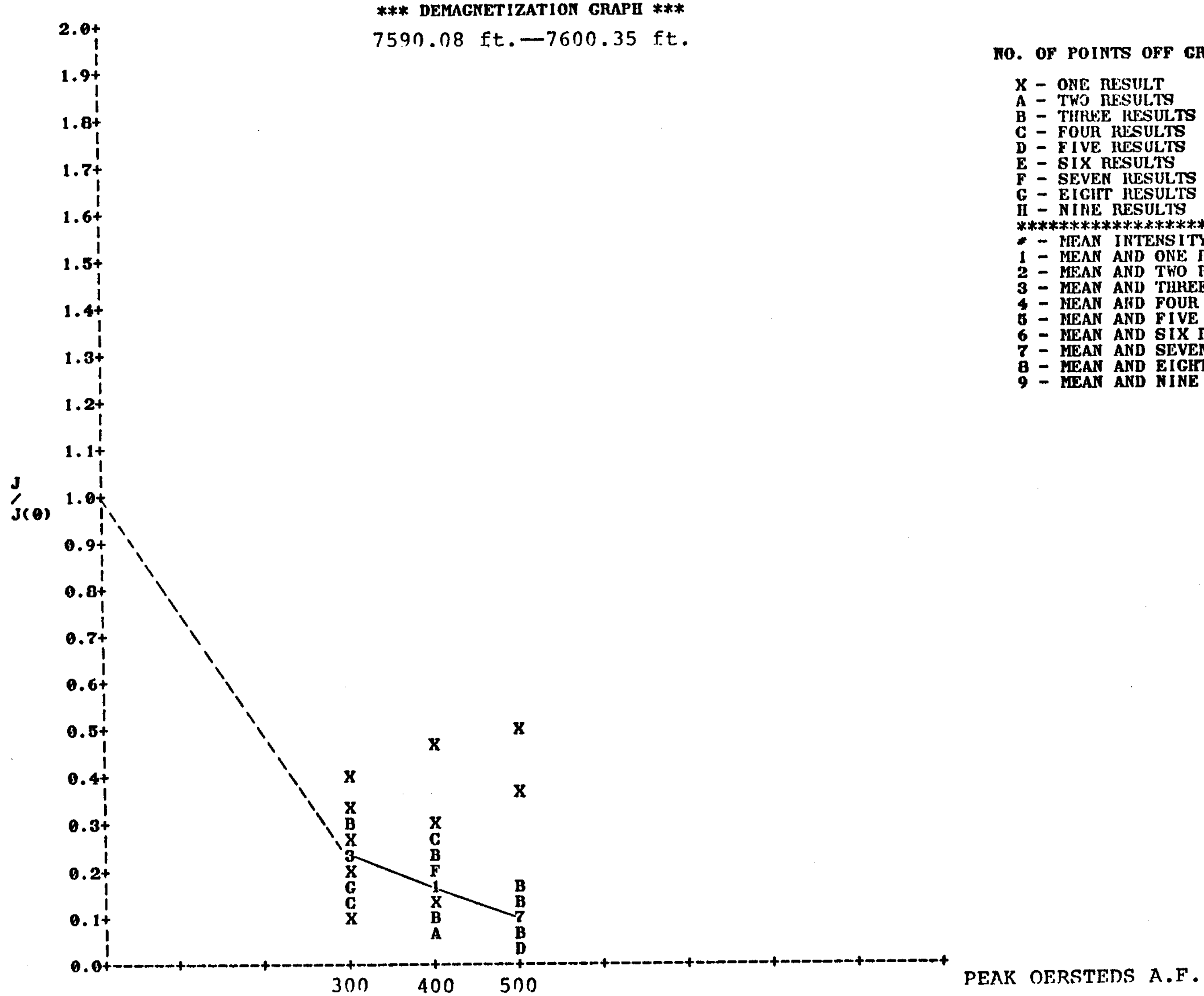
SAMPLE	NRM	300	400	500
MHLD30EA	76.8	31.7	19.9	20.2
MHLD30FA	47.7	33.2	25.0	14.0
MHLD30FB	15.9	14.0	12.0	12.4
MHLD30FC	78.5	38.8	21.7	5.1
MHLD30GA	72.4	22.7	31.5	36.7
MHLD31AA	18.0	1.9	0.8	-4.5
MHLD31BA	76.3	36.0	20.9	14.0
MHLD31BB	82.3	32.9	12.4	-1.2
MHLD31DA	75.7	58.4	35.6	4.4
MHLD31DB	70.6	68.4	49.7	2.8
MHLD31DC	73.0	57.3	43.0	34.8
MHLD31DD	81.7	70.6	71.4	74.4
MHLD31DE	81.7	67.2	60.3	38.0
MHLD31EA	87.5	46.1	29.9	22.0
MHLD31FA	27.9	14.4	8.0	0.3
MHLD31FB	70.8	30.4	16.7	0.9
MHLD31FC	53.0	41.2	-2.5	31.2
MHLD32AA	58.8	39.3	20.8	-18.4
MHLD32AB	56.1	48.1	34.1	11.2
MHLD32AC	70.5	62.7	23.2	25.9
MHLD32BA	66.1	51.0	47.7	57.1
MHLD32CA	63.3	52.0	45.8	22.8
MHLD32DA	75.0	34.6	44.6	-10.5
MHLD32EA	75.6	-31.7	-35.0	-56.1
MHLD32FA	69.3	46.0	32.2	40.2
MHLD32GA	-71.9	77.8	62.5	40.1
MHLD32HA	78.1	36.5	14.9	31.6
MHLD32IA	75.5	49.1	23.5	8.5
MHLD33AA	71.5	42.1	32.1	29.1
MHLD33AB	71.4	40.1	24.3	57.1
MHLD33AC	76.1	46.1	29.2	20.1
MHLD33AD	74.6	42.6	26.5	16.6
MHLD33AE	78.1	50.7	47.7	20.0
MHLD33AF	76.6	74.5	63.4	54.9
MHLD33AG	78.4	58.2	46.8	-27.8
MHLD33BA	69.4	48.8	34.4	28.3
MHLD33BB	67.5	44.4	25.3	76.0
MHLD33CA	-70.9	-53.1	-40.9	-66.0
MHLD33CB	-81.5	-52.1	-54.7	-52.4
MHLD33DA	65.9	87.8	61.6	53.1
MHLD33DB	64.5	80.3	56.8	-5.4
MHLD33DC	62.8	82.5	58.5	54.5
MHLD34AA	56.3	39.4	29.5	-5.4
MHLD34AB	88.4	53.3	35.1	26.5
MHLD34AC	81.9	59.4	31.9	24.0
MHLD34AD	82.9	51.8	28.1	17.0
MHLD34BA	71.5	57.9	54.9	24.5
MHLD34BB	67.7	55.3	38.0	24.8
MHLD34BC	62.1	56.6	44.1	23.5
MHLD34CA	73.8	63.0	25.0	72.3
MEAN	64.4	45.9	32.0	23.4
PALEOLAT.	46.2	27.3	17.4	12.2

CRYOGENIC MAGNETOMETER OUTPUT

SAMPLE	H=NRM X	H=NRM J	H=300 X	H=300 J	H=400 X	H=400 J	H=500 X	H=500 J	
MHLD34DA	0.0129	0.158E-05	0.0026	0.279E-06	0.0021	0.225E-06	0.0011	0.106E-06	?
MHLD34EA	-0.0128	0.135E-05	-0.0026	0.338E-06	-0.0013	0.385E-06	-0.0004	0.139E-06	
MHLD34EB	-0.0168	0.170E-05	-0.0039	0.413E-06	-0.0026	0.361E-06	-0.0011	0.113E-06	
MHLD34EC	-0.0157	0.175E-05	-0.0026	0.369E-06	-0.0014	0.295E-06	-0.0002	0.110E-06	
MHLD34ED	-0.0166	0.169E-05	-0.0028	0.362E-06	-0.0015	0.401E-06	-0.0005	0.169E-06	
MHLD34EE	-0.0154	0.163E-05	-0.0032	0.409E-06	-0.0016	0.342E-06	-0.0004	0.150E-06	
MHLD34EF	-0.0294	0.303E-05	-0.0076	0.915E-06	-0.0043	0.697E-06	-0.0018	0.424E-06	
MHLD34EG	-0.0114	0.129E-05	-0.0019	0.303E-06	-0.0013	0.254E-06	-0.0001	0.620E-07	
MHLD35AA	-0.0369	0.386E-05	-0.0061	0.725E-06	-0.0038	0.542E-06	-0.0012	0.164E-06	
MHLD35AB	-0.0252	0.274E-05	-0.0039	0.584E-06	-0.0026	0.417E-06	-0.0011	0.189E-06	
MHLD35AC	-0.0225	0.242E-05	-0.0042	0.580E-06	-0.0029	0.473E-06	-0.0014	0.233E-06	
MHLD35BA	-0.0433	0.452E-05	-0.0089	0.118E-05	-0.0057	0.702E-06	-0.0037	0.478E-06	
MHLD35CA	0.0485	0.504E-05	0.0157	0.206E-05	0.0072	0.137E-05	0.0127	0.176E-05	
MHLD35CB	0.0470	0.630E-05	0.0113	0.138E-05	0.0072	0.860E-06	0.0035	0.479E-06	?
MHLD35CC	0.0623	0.801E-05	0.0084	0.175E-05	0.0116	0.201E-05	0.0101	0.136E-05	
MHLD35DA	-0.0468	0.474E-05	-0.0129	0.158E-05	-0.0080	0.110E-05	-0.0051	0.650E-06	
MHLD35DB	-0.0599	0.743E-05	-0.0160	0.189E-05	-0.0096	0.115E-05	-0.0059	0.107E-05	
MHLD35DC	-0.0883	0.900E-05	-0.0168	0.223E-05	-0.0138	0.186E-05	-0.0084	0.125E-05	
MHLD35EA	-0.1122	0.114E-04	-0.0178	0.241E-05	-0.0119	0.167E-05	-0.0068	0.111E-05	
MHLD35FA	-0.0324	0.326E-05	-0.0059	0.687E-06	-0.0022	0.524E-06	-0.0016	0.301E-06	
MHLD35FB	-0.0752	0.759E-05	-0.0159	0.170E-05	-0.0083	0.101E-05	-0.0091	0.932E-06	
MHLD36AA	-0.0175	0.191E-05	-0.0032	0.321E-06	-0.0008	0.472E-06	-0.0020	0.245E-06	
MHLD36BA	-0.0300	0.328E-05	-0.0043	0.480E-06	-0.0019	0.424E-06	-0.0014	0.243E-06	
MHLD36CA	-0.0259	0.348E-05	-0.0063	0.103E-05	-0.0049	0.916E-06	-0.0036	0.549E-06	
MHLD36DA	-0.0210	0.233E-05	-0.0037	0.491E-06	-0.0021	0.345E-06	-0.0014	0.221E-06	
MHLD36EA	-0.0210	0.259E-05	-0.0038	0.478E-06	-0.0013	0.349E-06	-0.0010	0.239E-06	
MHLD36EB	-0.0233	0.264E-05	-0.0055	0.582E-06	-0.0026	0.322E-06	-0.0008	0.100E-06	
MHLD36EC	-0.0297	0.324E-05	-0.0061	0.743E-06	-0.0041	0.488E-06	-0.0033	0.382E-06	
MHLD36FA	-0.0137	0.166E-05	-0.0014	0.154E-06	-0.0011	0.243E-06	-0.0003	0.394E-07	
MHLD36FB	-0.0352	0.407E-05	-0.0059	0.665E-06	-0.0033	0.480E-06	-0.0011	0.263E-06	
MHLD36GA	-0.0603	0.770E-05	-0.0106	0.115E-05	-0.0060	0.960E-06	-0.0038	0.705E-06	
MHLD36GB	-0.0545	0.743E-05	-0.0053	0.196E-05	-0.0051	0.118E-05	-0.0034	0.810E-06	
MHLD36HA	-0.0819	0.860E-05	-0.0103	0.110E-05	-0.0045	0.450E-06	-0.0103	0.106E-05	
MHLD36HB	-0.0526	0.538E-05	-0.0075	0.782E-06	-0.0049	0.626E-06	-0.0009	0.358E-06	
MHLD37AA	-0.0785	0.901E-05	-0.0123	0.155E-05	-0.0061	0.886E-06	-0.0032	0.500E-06	
MHLD37AB	-0.1019	0.119E-04	-0.0269	0.328E-05	-0.0122	0.155E-05	-0.0124	0.184E-05	
MHLD37BA	-0.0652	0.733E-05	-0.0143	0.190E-05	-0.0105	0.107E-05	-0.0026	0.329E-06	
MHLD37BB	-0.0996	0.113E-04	-0.0129	0.139E-05	-0.0064	0.663E-06	-0.0069	0.971E-06	
MHLD37CA	-0.0323	0.361E-05	-0.0057	0.592E-06	-0.0034	0.468E-06	-0.0012	0.227E-06	
MHLD37DA	-0.0734	0.797E-05	-0.0234	0.241E-05	-0.0084	0.365E-05	0.0210	0.382E-05	
MHLD37DB	-0.0626	0.843E-05	-0.0170	0.195E-05	-0.0123	0.140E-05	-0.0096	0.103E-05	
MHLD37DC	-0.0477	0.507E-05	-0.0064	0.102E-05	0.0007	0.504E-06	0.0002	0.703E-06	
MHLD37EA	-0.0678	0.870E-05	-0.0115	0.152E-05	-0.0047	0.100E-05	-0.0015	0.509E-06	
MHLD37EB	-0.0565	0.573E-05	-0.0098	0.141E-05	-0.0053	0.108E-05	-0.0025	0.814E-06	
MHLD37FA	-0.1007	0.102E-04	-0.0190	0.242E-05	-0.0105	0.146E-05	-0.0058	0.994E-06	
MHLD37FB	-0.0945	0.976E-05	-0.0208	0.243E-05	-0.0110	0.142E-05	-0.0070	0.103E-05	
MHLD37GA	-0.0867	0.916E-05	-0.0143	0.186E-05	-0.0122	0.140E-05	-0.0038	0.844E-06	
MHLD37HA	-0.0190	0.206E-05	-0.0039	0.395E-06	-0.0015	0.269E-06	-0.0007	0.169E-06	
MHLD37IA	-0.0223	0.290E-05	-0.0049	0.649E-06	-0.0024	0.576E-06	-0.0012	0.333E-06	
MHLD38DA	-0.0849	0.110E-04	-0.0141	0.176E-05	-0.0080	0.124E-05	-0.0032	0.764E-06	

***** DEMAGNETIZATION GRAPH *****

7590.08 ft.—7600.35 ft.



NO. OF POINTS OFF GRAPH = 3

X - ONE RESULT
A - TWO RESULTS
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\# - MEAN INTENSITY
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****
* BRIDEN STABILITY INDEX *
****

Based on total magnetization (J).

SAMPLE	NRM-300	300-400	400-500
MHLD38DB	0.26	0.64	0.77
MHLD38EA	0.23	0.78	0.72
MHLD38EB	0.11	0.87	0.50
MHLD38FA	0.21	0.92	0.84
MHLD38HA	0.22	0.76	0.99
MHLD38IA	0.18	0.77	0.71
MHLD38IB	0.26	0.65	0.65
MHLD38KA	0.14	0.88	-7.54
MHLD38KB	0.15	0.65	0.90
MHLD38KC	0.20	0.78	0.72
MHLD38LA	0.20	0.51	0.09
MHLD39AA	0.21	0.68	0.55
MHLD39BA	0.33	0.60	0.67
MHLD39BB	0.24	0.78	0.70
MHLD39DA	0.22	0.48	0.74
MHLD39DB	0.20	0.50	0.56
MHLD39EA	0.15	0.44	0.36
MHLD39FA	0.14	0.52	0.75
MHLD39GA	0.17	0.61	0.80
MHLD39KA	0.24	0.72	0.57
MHLD39LA	0.17	0.66	0.44
MHLD39LB	0.37	0.78	0.66
MHLD39LC	0.95	0.66	0.61
MHLD40AA	0.33	0.86	0.48
MHLD40AB	0.19	0.60	0.51
MHLD40AC	0.19	0.79	0.40
MHLD40BA	0.24	0.66	0.79
MHLD40CA	0.20	0.73	0.71
MHLD40DA	0.16	0.83	0.63
MHLD40EA	0.20	0.88	0.65
MHLD40FA	0.22	0.60	0.68
MHLD40HA	0.19	0.74	0.66
MHLD40IA	0.14	0.61	0.55
MHLD40JA	0.13	0.59	0.89
MHLD40KA	0.23	0.67	0.77
MHLD41AA	0.10	0.89	0.13
MHLD41BA	0.23	0.84	0.38
MHLD41BB	0.29	0.78	0.11
MHLD41BC	0.18	0.67	0.50
MHLD41CA	0.27	0.73	0.77
MHLD41DA	0.27	0.64	0.71
MHLD41EA	0.23	0.67	0.70
MHLD41EB	0.26	0.77	0.79
MHLD41FA	0.26	0.73	0.77
MHLD41GA	0.26	0.70	0.77
MHLD42AA	0.54	0.88	0.57
MHLD42AB	0.56	0.87	0.85
MHLD42BA	0.28	0.86	0.64
MHLD42CA	0.21	0.73	0.47
MHLD42DA	0.51	0.84	0.94
MEAN	0.25	0.72	0.47

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* BRIDEN STABILITY INDEX *
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Based on vertical component only (X).

SAMPLE	NRM-300	300-400	400-500
MHLD38DB	0.21	0.50	0.47
MHLD38EA	0.22	0.72	0.93
MHLD38EB	0.11	0.48	0.0
MHLD38FA	0.19	0.53	0.19
MHLD38HA	0.25	0.61	0.76
MHLD38IA	0.16	0.42	0.35
MHLD38IB	0.17	0.43	0.57
MHLD38KA	0.16	0.51	-12.40
MHLD38KB	0.16	0.51	0.44
MHLD38KC	0.21	0.75	0.74
MHLD38LA	0.19	0.44	0.02
MHLD39AA	0.21	0.51	0.46
MHLD39BA	0.28	0.54	0.58
MHLD39BB	0.13	0.55	0.29
MHLD39DA	0.24	0.47	0.70
MHLD39DB	0.22	0.48	0.53
MHLD39EA	0.17	0.40	0.35
MHLD39FA	0.15	0.40	0.52
MHLD39GA	0.17	0.43	0.68
MHLD39KA	0.23	0.59	0.58
MHLD39LA	0.21	0.62	0.45
MHLD39LB	0.34	0.65	0.63
MHLD39LC	0.74	0.50	0.96
MHLD40AA	0.28	0.57	0.76
MHLD40AB	0.12	0.80	-0.06
MHLD40AC	0.17	0.99	0.16
MHLD40BA	0.28	0.63	0.60
MHLD40CA	0.19	0.56	0.57
MHLD40DA	0.13	0.59	-0.06
MHLD40EA	0.16	0.68	0.81
MHLD40FA	0.21	0.63	0.58
MHLD40HA	0.20	0.80	0.33
MHLD40IA	0.13	0.57	0.50
MHLD40JA	0.14	0.50	0.54
MHLD40KA	0.18	0.53	0.90
MHLD41AA	0.09	0.96	-0.12
MHLD41BA	0.17	0.62	0.54
MHLD41BB	0.23	0.74	0.08
MHLD41BC	0.15	0.59	0.41
MHLD41CA	0.26	0.79	0.67
MHLD41DA	0.31	0.66	0.69
MHLD41EA	0.21	0.64	0.66
MHLD41EB	0.28	0.69	0.81
MHLD41FA	0.25	0.69	0.79
MHLD41GA	0.26	0.69	0.76
MHLD42AA	0.56	0.93	0.40
MHLD42AB	0.57	0.77	0.89
MHLD42BA	0.23	0.88	0.47
MHLD42CA	0.22	0.68	0.40
MHLD42DA	0.51	0.84	0.95
MEAN	0.23	0.62	0.26

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*** INCLINATION AND PALEOLATITUDE ***
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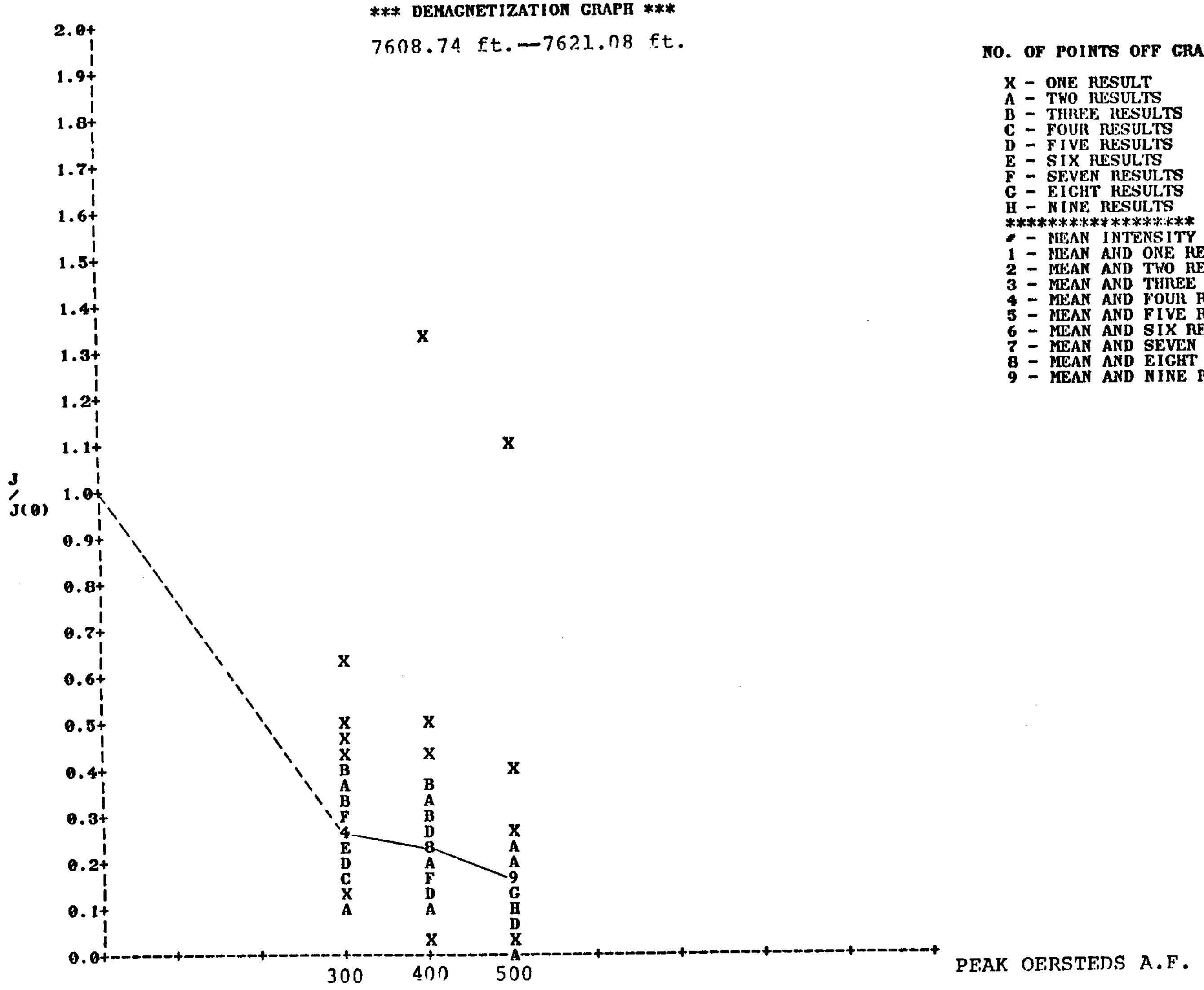
SAMPLE	NRM	300	400	500
MHLD38DB	79.5	53.9	39.1	22.6
MHLD38EA	-48.5	-44.8	-40.4	-56.3
MHLD38EB	-79.3	-70.2	-23.5	0.0
MHLD38FA	64.3	52.4	27.0	5.9
MHLD38HA	-49.3	-55.9	-41.1	-54.0
MHLD38IA	73.3	57.5	27.7	13.2
MHLD38IB	37.2	23.8	15.4	13.4
MHLD38KA	54.2	66.2	32.2	-43.9
MHLD38KB	64.4	72.8	48.6	21.7
MHLD38KC	71.8	83.5	74.0	84.8
MHLD38LA	78.0	70.8	54.8	12.6
MHLD39AA	54.0	53.7	36.9	30.2
MHLD39BA	76.9	56.3	48.3	40.2
MHLD39BB	73.0	32.1	21.9	9.0
MHLD39DA	63.5	80.6	75.2	66.1
MHLD39DB	66.1	79.7	70.9	63.6
MHLD39EA	60.5	75.0	61.9	59.3
MHLD39FA	49.4	52.7	37.4	24.9
MHLD39GA	48.2	49.7	32.7	17.9
MHLD39KA	55.3	52.2	40.4	41.2
MHLD39LA	53.6	74.3	64.5	68.7
MHLD39LB	44.5	39.7	31.9	30.5
MHLD39LC	-35.4	-50.0	-35.4	-66.7
MHLD40AA	46.2	37.4	23.8	40.2
MHLD40AB	47.0	26.0	35.9	-3.9
MHLD40AC	47.5	40.3	55.3	19.2
MHLD40BA	44.3	55.0	51.4	36.7
MHLD40CA	72.8	66.5	44.3	33.9
MHLD40DA	70.8	47.1	31.3	-2.9
MHLD40EA	60.9	46.6	34.1	44.3
MHLD40FA	-67.2	-60.8	-67.3	-52.3
MHLD40HA	61.8	64.7	80.4	29.8
MHLD40IA	57.6	55.3	50.6	45.2
MHLD40JA	53.2	54.7	43.6	24.7
MHLD40KA	-84.7	-50.4	-38.2	-61.3
MHLD41AA	58.4	51.9	57.3	-3.0
MHLD41BA	76.2	46.7	32.7	50.2
MHLD41BB	70.5	49.7	46.5	29.9
MHLD41BC	80.2	53.0	44.5	35.7
MHLD41CA	54.9	50.3	55.5	46.0
MHLD41DA	-55.1	-69.9	-75.8	-71.1
MHLD41EA	67.1	55.6	51.4	47.7
MHLD41EB	51.9	58.0	49.7	51.8
MHLD41FA	67.9	63.7	57.5	59.5
MHLD41GA	71.9	69.7	67.8	66.8
MHLD42AA	52.9	56.8	62.1	39.0
MHLD42AB	60.6	61.1	51.3	54.6
MHLD42BA	56.6	41.6	42.7	29.7
MHLD42CA	52.9	58.4	52.8	43.0
MHLD42DA	53.5	53.0	52.5	53.5
MEAN	52.1	47.8	40.3	30.1
PALEOLAT.	32.7	28.9	23.0	16.2

CRYOGENIC MAGNETOMETER OUTPUT

SAMPLE	H=NRM X	H=NRM J	H=300 X	H=300 J	H=400 X	H=400 J	H=500 X	H=500 J
MHLD42DB	-0.4355	0.531E-04	-0.1135	0.139E-04	-0.0783	0.940E-05	-0.0483	0.616E-05
MHLD42EA	-0.5260	0.608E-04	-0.2050	0.229E-04	-0.1535	0.191E-04	-0.1316	0.156E-04
MHLD42FA	-0.2460	0.292E-04	-0.0675	0.725E-05	-0.0433	0.520E-05	-0.0293	0.331E-05
MHLD42GA	-0.2110	0.256E-04	-0.0430	0.531E-05	-0.0320	0.389E-05	-0.0206	0.240E-05
MHLD42GB	-0.1660	0.209E-04	-0.0295	0.403E-05	-0.0221	0.298E-05	-0.0131	0.191E-05
MHLD42GC	-0.1150	0.164E-04	-0.0285	0.510E-05	-0.0314	0.447E-05	-0.0169	0.397E-05
MHLD42HA	-0.0125	0.149E-05	-0.0010	0.320E-06	-0.0017	0.311E-06	-0.0010	0.110E-06
MHLD42HB	-0.0224	0.278E-05	-0.0005	0.308E-06	-0.0041	0.504E-06	-0.0021	0.385E-06
MHLD42HC	-0.1165	0.120E-04	-0.0260	0.299E-05	-0.0515	0.572E-05	-0.0135	0.154E-05
MHLD43AA	-0.0844	0.876E-05	-0.0128	0.136E-05	-0.0067	0.965E-06	-0.0008	0.100E-06
MHLD43AB	-0.0889	0.100E-04	-0.0077	0.829E-06	-0.0028	0.438E-06	0.0011	0.954E-06
MHLD43AC	-0.0592	0.658E-05	-0.0159	0.164E-05	-0.0107	0.110E-05	-0.0029	0.642E-06
MHLD43AD	-0.0409	0.444E-05	-0.0109	0.122E-05	-0.0050	0.573E-06	-0.0029	0.362E-06
MHLD43AE	-0.0747	0.841E-05	-0.0169	0.184E-05	-0.0114	0.128E-05	-0.0063	0.752E-06
MHLD43BA	-0.1402	0.150E-04	-0.0269	0.287E-05	-0.0168	0.183E-05	-0.0096	0.105E-05
MHLD43BB	-0.0528	0.575E-05	-0.0114	0.118E-05	-0.0066	0.746E-06	-0.0033	0.410E-06
MHLD43BC	-0.0448	0.480E-05	-0.0115	0.122E-05	-0.0062	0.678E-06	-0.0047	0.601E-06
MHLD43CA	-0.0072	0.773E-06	-0.0013	0.371E-06	-0.0008	0.277E-06	-0.0001	0.300E-06
MHLD43CB	-0.0199	0.236E-05	-0.0050	0.637E-06	-0.0033	0.532E-06	-0.0021	0.369E-06
MHLD43EA	-0.0254	0.276E-05	-0.0064	0.771E-06	-0.0044	0.527E-06	-0.0033	0.403E-06
MHLD43FA	-0.0401	0.455E-05	-0.0104	0.126E-05	-0.0071	0.896E-06	-0.0043	0.548E-06
MHLD43JA	-0.0144	0.179E-05	-0.0030	0.500E-06	-0.0022	0.385E-06	-0.0005	0.317E-06
MHLD44AA	-0.0104	0.120E-05	-0.0027	0.292E-06	-0.0014	0.271E-06	-0.0006	0.671E-07
MHLD44AB	-0.0097	0.998E-06	-0.0014	0.172E-06	-0.0001	0.251E-06	0.0	0.170E-06
MHLD44AC	-0.0091	0.127E-05	-0.0019	0.281E-06	-0.0005	0.255E-06	-0.0000	0.194E-06
MHLD44CA	-0.0093	0.127E-05	-0.0020	0.296E-06	-0.0012	0.339E-06	-0.0001	0.118E-06
MHLD44DA	-0.0333	0.376E-05	-0.0102	0.102E-05	-0.0063	0.705E-06	-0.0032	0.373E-06
MHLD44EA	-0.0094	0.982E-06	-0.0013	0.181E-06	-0.0010	0.205E-06	0.0003	0.394E-07
MHLD44GA	0.0086	0.112E-05	0.0016	0.186E-06	-0.0011	0.118E-06	-0.0015	0.168E-06
MHLD44JA	-0.0195	0.199E-05	-0.0091	0.932E-06	-0.0054	0.584E-06	-0.0026	0.282E-06
MHLD44KA	-0.0329	0.357E-05	-0.0086	0.103E-05	-0.0044	0.591E-06	-0.0029	0.528E-06
MHLD45AA	-0.0256	0.352E-05	-0.0071	0.952E-06	-0.0044	0.763E-06	-0.0020	0.430E-06
MHLD45AB	-0.0308	0.445E-05	-0.0092	0.123E-05	-0.0059	0.970E-06	-0.0053	0.601E-06
MHLD45AC	-0.0330	0.340E-05	-0.0092	0.131E-05	-0.0055	0.984E-06	-0.0009	0.823E-06
MHLD45AD	-0.0232	0.341E-05	-0.0075	0.117E-05	-0.0048	0.785E-06	-0.0025	0.462E-06
MHLD45BA	-0.0176	0.177E-05	-0.0041	0.554E-06	-0.0024	0.436E-06	-0.0005	0.230E-06
MHLD45DA	-0.0303	0.364E-05	-0.0084	0.112E-05	-0.0041	0.702E-06	-0.0024	0.404E-06
MHLD45FA	-0.0141	0.148E-05	-0.0043	0.451E-06	-0.0023	0.355E-06	-0.0024	0.262E-06
MHLD45FB	-0.0180	0.185E-05	-0.0048	0.565E-06	-0.0022	0.420E-06	-0.0012	0.228E-06
MHLD45FC	-0.0153	0.180E-05	-0.0019	0.270E-06	-0.0009	0.349E-06	-0.0004	0.252E-06
MHLD45GA	-0.0166	0.240E-05	-0.0036	0.659E-06	-0.0015	0.607E-06	-0.0007	0.310E-06
MHLD45GB	-0.0725	0.929E-05	-0.0114	0.368E-05	0.0119	0.349E-05	-0.0093	0.114E-05
MHLD45GC	-0.0039	0.433E-06	0.0017	0.266E-06	0.0032	0.566E-06	0.0046	0.468E-06
MHLD45GD	-0.0204	0.266E-05	-0.0054	0.116E-05	-0.0075	0.110E-05	-0.0009	0.560E-06
MHLD45GE	-0.0156	0.218E-05	-0.0041	0.474E-06	-0.0029	0.375E-06	-0.0022	0.297E-06
MHLD45GF	-0.0561	0.725E-05	-0.0182	0.201E-05	-0.0122	0.144E-05	-0.0023	0.877E-06
MHLD46AA	-0.0494	0.610E-05	-0.0161	0.229E-05	-0.0093	0.187E-05	-0.0076	0.121E-05
MHLD46AB	-0.0647	0.709E-05	-0.0195	0.231E-05	-0.0114	0.149E-05	-0.0075	0.117E-05
MHLD46AC	-0.0163	0.258E-05	-0.0007	0.357E-06	-0.0076	0.906E-06	0.0	0.391E-07
MHLD46AD	-0.0123	0.131E-05	-0.0030	0.468E-06	-0.0016	0.434E-06	-0.0013	0.203E-06

*** DEMAGNETIZATION GRAPH ***

7608.74 ft.—7621.08 ft.



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****
* BRIDEN STABILITY INDEX *
****

Based on total magnetization (J).

SAMPLE	NRM-300	300-400	400-500
MHLD42DB	0.26	0.68	0.66
MHLD42EA	0.38	0.83	0.82
MHLD42FA	0.25	0.72	0.64
MHLD42GA	0.21	0.73	0.62
MHLD42GB	0.19	0.74	0.64
MHLD42GC	0.31	0.88	0.89
MHLD42HA	0.21	0.97	0.35
MHLD42HB	0.11	0.37	0.76
MHLD42HC	0.25	0.09	0.27
MHLD43AA	0.16	0.71	0.10
MHLD43AB	0.08	0.53	-0.18
MHLD43AC	0.25	0.67	0.59
MHLD43AD	0.27	0.47	0.63
MHLD43AE	0.22	0.70	0.59
MHLD43BA	0.19	0.64	0.57
MHLD43BB	0.20	0.63	0.55
MHLD43BC	0.25	0.55	0.89
MHLD43CA	0.48	0.75	0.91
MHLD43CB	0.27	0.83	0.69
MHLD43EA	0.28	0.68	0.76
MHLD43FA	0.28	0.71	0.61
MHLD43JA	0.28	0.77	0.82
MHLD44AA	0.24	0.93	0.25
MHLD44AB	0.17	0.54	0.68
MHLD44AC	0.22	0.91	0.76
MHLD44CA	0.23	0.86	0.35
MHLD44DA	0.27	0.69	0.53
MHLD44EA	0.18	0.87	0.19
MHLD44GA	0.17	0.63	0.58
MHLD44JA	0.47	0.63	0.48
MHLD44KA	0.29	0.58	0.89
MHLD45AA	0.27	0.80	0.56
MHLD45AB	0.28	0.79	0.62
MHLD45AC	0.38	0.75	0.84
MHLD45AD	0.34	0.67	0.59
MHLD45BA	0.31	0.79	0.53
MHLD45DA	0.31	0.63	0.58
MHLD45FA	0.30	0.79	0.74
MHLD45FB	0.30	0.74	0.54
MHLD45FC	0.15	0.71	0.72
MHLD45GA	0.27	0.92	0.51
MHLD45GB	0.40	0.95	0.33
MHLD45GC	0.61	-0.13	0.83
MHLD45GD	0.44	0.95	0.51
MHLD45GE	0.22	0.79	0.79
MHLD45GF	0.28	0.71	0.61
MHLD46AA	0.38	0.82	0.65
MHLD46AB	0.33	0.64	0.79
MHLD46AC	0.14	-0.54	0.04
MHLD46AD	0.36	0.93	0.47
MEAN	0.27	0.68	0.58

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* BRIDEN STABILITY INDEX *
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Based on vertical component only (X).

SAMPLE	NRM-300	300-400	400-500
MHLD42DB	0.26	0.69	0.62
MHLD42EA	0.39	0.75	0.86
MHLD42FA	0.27	0.64	0.68
MHLD42GA	0.20	0.75	0.64
MHLD42GB	0.18	0.75	0.60
MHLD42GC	0.25	0.90	0.54
MHLD42HA	0.08	0.30	0.56
MHLD42HB	0.02	-6.20	0.51
MHLD42HC	0.22	0.02	0.26
MHLD43AA	0.15	0.52	0.12
MHLD43AB	0.09	0.37	-0.37
MHLD43AC	0.27	0.67	0.27
MHLD43AD	0.27	0.46	0.59
MHLD43AE	0.23	0.67	0.55
MHLD43BA	0.19	0.63	0.57
MHLD43BB	0.22	0.58	0.50
MHLD43BC	0.26	0.54	0.77
MHLD43CA	0.19	0.63	0.12
MHLD43CB	0.25	0.67	0.61
MHLD43EA	0.25	0.69	0.75
MHLD43FA	0.26	0.68	0.60
MHLD43JA	0.21	0.73	0.23
MHLD44AA	0.26	0.50	0.44
MHLD44AB	0.14	0.11	0.0
MHLD44AC	0.20	0.27	0.00
MHLD44CA	0.22	0.60	0.08
MHLD44DA	0.31	0.63	0.51
MHLD44EA	0.14	0.81	-0.24
MHLD44GA	0.19	-0.67	0.64
MHLD44JA	0.46	0.60	0.48
MHLD44KA	0.26	0.52	0.65
MHLD45AA	0.28	0.62	0.47
MHLD45AB	0.30	0.64	0.91
MHLD45AC	0.28	0.60	0.17
MHLD45AD	0.32	0.64	0.51
MHLD45BA	0.24	0.58	0.21
MHLD45DA	0.28	0.49	0.58
MHLD45FA	0.31	0.53	0.96
MHLD45FB	0.27	0.45	0.58
MHLD45FC	0.12	0.49	0.39
MHLD45GA	0.22	0.43	0.48
MHLD45GB	0.16	-1.04	-0.79
MHLD45GC	-0.44	0.15	0.54
MHLD45GD	0.26	0.60	0.12
MHLD45GE	0.26	0.71	0.76
MHLD45GF	0.32	0.67	0.19
MHLD46AA	0.33	0.58	0.81
MHLD46AB	0.30	0.59	0.66
MHLD46AC	0.04	-8.86	0.0
MHLD46AD	0.25	0.54	0.79
MEAN	0.22	0.18	0.43

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* INCLINATION AND PALEOLATITUDE *
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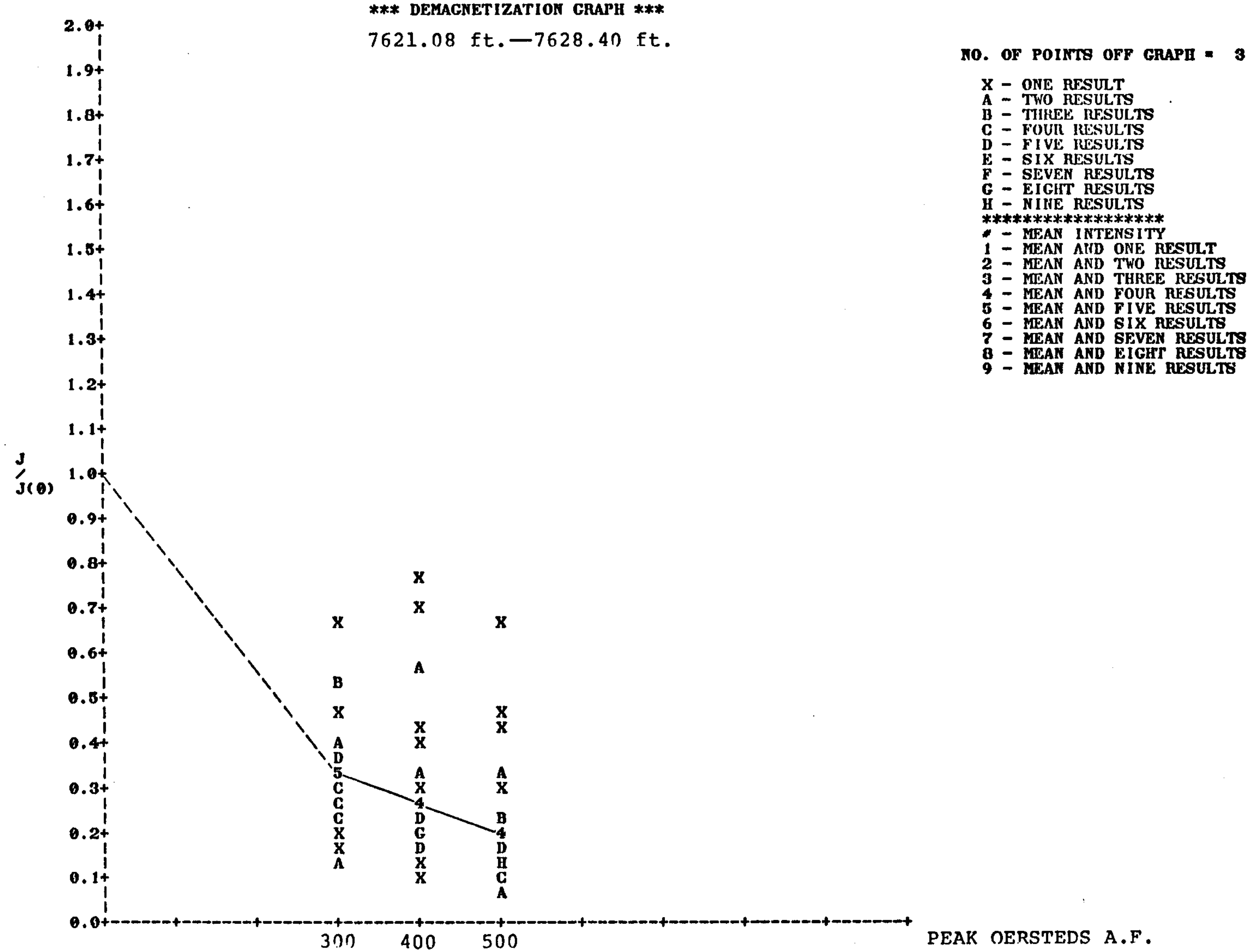
SAMPLE	NRM	300	400	500
MHLD42DB	55.2	54.7	56.4	51.6
MHLD42EA	60.0	63.4	53.5	57.4
MHLD42FA	57.5	68.6	56.4	62.5
MHLD42GA	55.7	54.1	55.4	59.3
MHLD42GB	52.7	47.0	47.8	43.5
MHLD42GC	44.5	34.0	44.5	25.2
MHLD42HA	56.9	18.2	33.2	59.9
MHLD42HB	54.0	9.3	54.5	33.1
MHLD42HC	76.6	60.2	64.3	61.7
MHLD43AA	74.4	70.7	44.0	53.1
MHLD43AB	62.4	68.2	40.6	-6.3
MHLD43AC	64.3	76.4	78.5	27.4
MHLD43AD	67.0	63.3	60.7	54.5
MHLD43AE	62.7	66.9	62.5	56.9
MHLD43BA	68.6	69.8	67.0	65.9
MHLD43BB	66.6	76.5	62.2	53.6
MHLD43BC	69.0	70.3	66.2	52.2
MHLD43CA	69.7	21.4	17.9	1.9
MHLD43CB	57.5	51.7	39.1	33.8
MHLD43EA	67.4	56.8	57.6	56.3
MHLD43FA	61.9	55.9	52.4	50.8
MHLD43JA	53.6	36.9	34.9	9.1
MHLD44AA	59.5	67.6	29.9	63.4
MHLD44AB	76.4	51.8	3.4	0.0
MHLD44AC	46.1	41.1	11.3	0.0
MHLD44CA	47.0	42.5	20.8	4.8
MHLD44DA	62.3	85.8	64.3	60.6
MHLD44EA	72.2	46.0	30.9	-39.4
MHLD44GA	-50.0	-62.5	68.8	63.2
MHLD44JA	79.2	76.1	67.6	67.1
MHLD44KA	66.9	57.0	48.8	33.3
MHLD45AA	46.7	48.7	35.2	28.5
MHLD45AB	43.8	48.2	37.5	63.0
MHLD45AC	75.9	44.8	34.0	6.6
MHLD45AD	42.9	40.0	37.7	32.0
MHLD45BA	83.7	48.5	33.4	12.5
MHLD45DA	56.4	48.8	36.2	36.4
MHLD45FA	72.6	74.5	40.4	66.3
MHLD45FB	76.4	58.2	30.8	33.3
MHLD45FC	58.2	43.2	14.9	8.0
MHLD45GA	44.0	33.1	14.8	14.0
MHLD45GB	51.3	18.0	-19.9	54.9
MHLD45GC	64.3	-39.8	-33.8	-79.5
MHLD45GD	50.1	27.7	43.2	9.3
MHLD45GE	46.0	59.9	50.7	47.9
MHLD45GF	50.7	64.9	58.2	15.5
MHLD46AA	54.2	44.6	30.0	39.0
MHLD46AB	65.8	57.6	59.4	40.0
MHLD46AC	39.3	11.3	57.0	0.0
MHLD46AD	69.4	40.7	22.3	39.9
MEAN	59.2	49.5	42.4	36.2
PALEOLAT.	40.0	30.3	24.6	20.1

CRYOGENIC MAGNETOMETER OUTPUT

SAMPLE	H=NRM X	H=NRM J	H=300 X	H=300 J	H=400 X	H=400 J	H=500 X	H=500 J
MHLD46AE	-0.0056	0.566E-06	-0.0015	0.191E-06	0.0038	0.419E-06	-0.0001	0.702E-07
MHLD46BA	-0.0225	0.360E-05	-0.0143	0.194E-05	-0.0061	0.116E-05	-0.0067	0.161E-05
MHLD46BB	-0.0044	0.642E-06	-0.0004	0.203E-06	0.0003	0.359E-06	0.0001	0.967E-07
MHLD46BC	-0.0049	0.603E-06	-0.0012	0.400E-06	-0.0012	0.425E-06	-0.0003	0.252E-06
MHLD46CA	-0.1883	0.204E-04	-0.1014	0.109E-04	-0.0817	0.855E-05	-0.0633	0.666E-05
MHLD46DA	-0.1000	0.102E-04	-0.0318	0.383E-05	-0.0210	0.261E-05	-0.0138	0.171E-05
MHLD46DB	-0.2397	0.333E-04	-0.0656	0.964E-05	-0.0448	0.630E-05	-0.0250	0.477E-05
MHLD46DC	-0.5433	0.657E-04	-0.0710	0.877E-05	-0.0601	0.852E-05	-0.0505	0.719E-05
MHLD46DD	-0.2075	0.281E-04	-0.1068	0.147E-04	-0.0460	0.588E-05	-0.0319	0.414E-05
MHLD47AA	-0.2865	0.302E-04	-0.0585	0.705E-05	-0.0391	0.469E-05	-0.0293	0.356E-05
MHLD47AB	-0.8104	0.871E-04	-0.2864	0.311E-04	-0.1195	0.197E-04	-0.1557	0.196E-04
MHLD47BA	-0.2368	0.269E-04	-0.0798	0.954E-05	-0.0569	0.692E-05	-0.0404	0.497E-05
MHLD47BB	-0.1993	0.236E-04	-0.0582	0.712E-05	-0.0417	0.503E-05	-0.0340	0.427E-05
MHLD47BC	-0.4324	0.554E-04	-0.1094	0.139E-04	-0.1102	0.119E-04	-0.0775	0.816E-05
MHLD47BD	-0.5840	0.687E-04	-0.1793	0.215E-04	-0.1238	0.151E-04	-0.0870	0.107E-04
MHLD47CA	-0.5508	0.591E-04	-0.1725	0.211E-04	-0.0747	0.947E-05	-0.1105	0.127E-04
MHLD47CB	-0.0479	0.534E-05	-0.0142	0.253E-05	-0.0037	0.109E-05	-0.0027	0.172E-05
MHLD47CC	-0.4620	0.508E-04	-0.1598	0.187E-04	-0.1043	0.126E-04	-0.0775	0.948E-05
MHLD47CD	-0.4440	0.502E-04	-0.1352	0.158E-04	-0.0882	0.103E-04	-0.0655	0.774E-05
MHLD47CE	-0.3977	0.472E-04	-0.1125	0.139E-04	-0.0771	0.914E-05	-0.0609	0.717E-05
MHLD47DA	-0.0869	0.108E-04	-0.0239	0.277E-05	-0.0152	0.182E-05	-0.0111	0.146E-05
MHLD47FA	-0.0146	0.154E-05	-0.0027	0.341E-06	-0.0015	0.254E-06	-0.0005	0.890E-07
MHLD47GA	-0.0484	0.488E-05	-0.0131	0.133E-05	-0.0073	0.734E-06	-0.0055	0.560E-06
MHLD48AA	-0.0220	0.234E-05	-0.0070	0.896E-06	-0.0042	0.736E-06	-0.0037	0.550E-06
MHLD48EA	-0.0066	0.671E-06	-0.0018	0.275E-06	-0.0009	0.376E-06	-0.0000	0.451E-06
MHLD48GA	-0.0104	0.124E-05	-0.0010	0.361E-06	0.0006	0.485E-06	0.0010	0.347E-06
MHLD48HA	0.0161	0.177E-05	0.0042	0.572E-06	0.0025	0.485E-06	0.0019	0.322E-06
MHLD48JB	0.0144	0.157E-05	0.0030	0.311E-06	0.0014	0.178E-06	0.0011	0.129E-06
MHLD48JC	0.0155	0.178E-05	0.0018	0.389E-06	0.0007	0.358E-06	-0.0003	0.261E-06
MHLD48KA	-0.0132	0.140E-05	-0.0018	0.183E-06	-0.0008	0.252E-06	-0.0001	0.131E-06
MHLD48MA	-0.0104	0.111E-05	-0.0016	0.266E-06	-0.0007	0.234E-06	0.0001	0.561E-07
MHLD48MB	-0.0115	0.119E-05	-0.0029	0.298E-06	-0.0002	0.286E-06	-0.0002	0.123E-06
MHLD48MC	-0.0089	0.963E-06	-0.0015	0.171E-06	-0.0008	0.297E-06	-0.0009	0.131E-06

*** DEMAGNETIZATION GRAPH ***

7621.08 ft.—7628.40 ft.



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* BRIDEN STABILITY INDEX *
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Based on total magnetization (J).

SAMPLE	NRM-300	300-400	400-500
MHLD46AE	0.34	-0.19	0.17
MHLD46BA	0.54	0.60	0.61
MHLD46BB	0.32	0.23	0.27
MHLD46BC	0.66	0.94	0.59
MHLD46CA	0.54	0.78	0.78
MHLD46DA	0.38	0.68	0.66
MHLD46DB	0.29	0.65	0.76
MHLD46DC	0.13	0.97	0.84
MHLD46DD	0.52	0.40	0.70
MHLD47AA	0.23	0.67	0.76
MHLD47AB	0.36	0.63	1.00
MHLD47BA	0.35	0.73	0.72
MHLD47BB	0.30	0.71	0.85
MHLD47BC	0.25	0.85	0.69
MHLD47BD	0.31	0.70	0.71
MHLD47CA	0.36	0.45	0.66
MHLD47CB	0.47	0.43	0.42
MHLD47CC	0.37	0.67	0.75
MHLD47CD	0.31	0.65	0.75
MHLD47CE	0.29	0.66	0.78
MHLD47DA	0.26	0.66	0.80
MHLD47FA	0.22	0.75	0.35
MHLD47GA	0.27	0.55	0.76
MHLD48AA	0.38	0.82	0.75
MHLD48EA	0.41	0.63	0.80
MHLD48GA	0.29	0.66	0.71
MHLD48HA	0.32	0.85	0.66
MHLD48JB	0.20	0.57	0.73
MHLD48JC	0.22	0.92	0.73
MHLD48KA	0.13	0.62	0.52
MHLD48MA	0.24	0.88	0.24
MHLD48MB	0.25	0.96	0.43
MHLD48MC	0.18	0.26	0.44
MEAN	0.32	0.65	0.65

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* BRIDEN STABILITY INDEX *
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Based on vertical component only (X).

SAMPLE	NRM-300	300-400	400-500
MHLD46AE	0.27	-2.53	-0.01
MHLD46BA	0.64	0.43	0.92
MHLD46BB	0.08	-0.86	0.50
MHLD46BC	0.24	0.96	0.24
MHLD46CA	0.54	0.81	0.78
MHLD46DA	0.32	0.66	0.66
MHLD46DB	0.27	0.68	0.56
MHLD46DC	0.13	0.85	0.84
MHLD46DD	0.51	0.43	0.69
MHLD47AA	0.20	0.67	0.75
MHLD47AB	0.35	0.42	0.70
MHLD47BA	0.34	0.71	0.71
MHLD47BB	0.29	0.72	0.82
MHLD47BC	0.25	0.99	0.70
MHLD47BD	0.31	0.69	0.70
MHLD47CA	0.31	0.43	0.52
MHLD47CB	0.30	0.26	0.74
MHLD47CC	0.35	0.65	0.74
MHLD47CD	0.30	0.65	0.74
MHLD47CE	0.28	0.69	0.78
MHLD47DA	0.28	0.64	0.72
MHLD47FA	0.19	0.56	0.35
MHLD47CA	0.27	0.56	0.76
MHLD48AA	0.32	0.61	0.87
MHLD48EA	0.27	0.53	0.05
MHLD48GA	0.10	-0.57	0.25
MHLD48HA	0.26	0.58	0.78
MHLD48JB	0.21	0.47	0.79
MHLD48JC	0.12	0.35	-0.38
MHLD48KA	0.14	0.47	0.18
MHLD48MA	0.15	0.45	-0.07
MHLD48MB	0.25	0.07	1.00
MHLD48MC	0.17	0.55	0.88
MEAN	0.27	0.41	0.58

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* INCLINATION AND PALEOLATITUDE *
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SAMPLE	NRM	300	400	500
MHLD46AE	81.3	51.8	-65.2	4.1
MHLD46BA	38.8	47.6	32.1	24.3
MHLD46BB	43.2	9.9	-4.8	-8.9
MHLD46BC	55.2	17.5	17.1	6.8
MHLD46CA	67.6	68.1	72.8	72.0
MHLD46DA	79.9	56.4	53.7	54.0
MHLD46DB	46.0	42.9	45.4	31.7
MHLD46DC	55.8	54.0	44.9	44.6
MHLD46DD	47.6	46.5	51.5	50.5
MHLD47AA	71.7	56.1	56.4	55.5
MHLD47AB	68.5	66.9	37.4	52.4
MHLD47BA	61.7	56.8	55.3	54.3
MHLD47BB	57.8	54.8	56.2	52.9
MHLD47BC	51.4	51.7	68.0	72.0
MHLD47BD	58.2	56.6	55.3	54.2
MHLD47CA	68.7	54.9	52.1	60.9
MHLD47CB	63.7	34.2	19.9	9.2
MHLD47CC	65.3	58.7	55.7	54.8
MHLD47CD	62.2	58.8	58.9	57.8
MHLD47CE	57.4	54.2	57.5	56.8
MHLD47DA	53.9	59.6	57.0	49.4
MHLD47FA	71.2	53.8	37.6	38.2
MHLD47GA	83.4	80.1	84.4	82.5
MHLD48AA	69.9	51.4	35.3	42.3
MHLD48EA	82.2	40.9	14.7	0.6
MHLD48GA	57.5	16.9	-7.1	-17.6
MHLD48HA	-65.2	-48.0	-30.4	-36.1
MHLD48JB	-65.9	-74.4	-51.9	-58.6
MHLD48JC	-60.8	-28.4	-10.5	5.5
MHLD48KA	70.8	78.9	19.7	6.6
MHLD48MA	70.0	35.7	17.4	-5.1
MHLD48MB	74.8	76.4	4.0	9.4
MHLD48MC	68.3	64.8	16.6	46.5
MEAN	57.7	47.2	35.7	34.8
PALEOLAT.	38.3	28.3	19.7	19.2